DOCUMENT RESUME

ED 270 352 SO 017 160

AUTHOR	Cain, Mead
TITLE	Women's Status and Fertility in Developing Countries: Son Preference and Economic Security. World Bank Staff Working Papers No. 682 and Population and Development Series No. 7.
INSTITUTION	World Bank, Washington, D. C.
REPORT NO	ISBN-0-8213-0446-1
PUB DATE	84
NOTE	85p.; For related documents, see SO 017 156-157; SO 017 161-164; SO 017 192.
AVAILABLE FROM	Publications Sales Unit, Department T, The World Bank, 1818 H Street, N.W., Washington, DC. 20433.
PUB TYPE	Reports - Research/Technical (143)
EDRS PRICE	MF01 Plus Postage. PC Not Available from EDRS.
DESCRIPTORS	*Birth Rate; Demography; Developing Nations; *Economic Factors; *Economic Status; Family Size; Females; Population Growth; Population Trends; Womens Studies
IDENTIFIERS	Bangladesh; India (South)

ABSTRACT

The relationship between women's status--defined in terms of the degree to which they are economically dependent on men--and fertility in developing nations is examined. After a brief introduction, part 2 discusses a particular theoretical perspective regarding fertility determinants in developing countries and explores the implications of women's status within that context. Special attention is given to the value of children as security assets in settings where public welfare assistance in minimal or nonexistent and financial and insurance markets are poorly developed. Part 3 examines women's situation in which economic status and the institutional factors that create a particular degree of dependence determine the relevance of sex of children in defining security goals. It is noted that in societies where women are highly dependent on men, security goals will, of necessity, be defined in terms of surviving sons; where women are relatively independent economically, it is more likely that children of either sex can severe security goals. Part 4 uses a cross-national empirical analysis to support the argument that given similar security needs, and other things being equal, fertility will be considerably higher in settings where there is a strong preference for sons than in settings where son preference is weak. (Author/RSL)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED270352

Women's Status and Fertility in Developing Countries

Son Preference and Economic Security

Mead Cain

WORLD BANK STAFF WORKING PAPERS
Number 682

POPULATION AND DEVELOPMENT SERIES
Number 7

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

X This document has been reproduced as received from the person or organization originating it.

☐ Minor changes have been made to improve reproduction quality

• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy

"PERMISSION TO REPRODUCE THIS MATERIAL IN MICROFICHE ONLY HAS BEEN GRANTED BY

KATIE FAWCETT

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

SP017160

WORLD BANK STAFF WORKING PAPERS
Number 682

POPULATION AND DEVELOPMENT SERIES
Number 7

Women's Status and Fertility in Developing Countries

Son Preference and Economic Security

Mead Cain

The World Bank
Washington, D.C., U.S.A.

Copyright © 1984
The International Bank for Reconstruction
and Development / THE WORLD BANK
1818 H Street, N.W.
Washington, D.C. 20433, U.S.A.

All rights reserved
Manufactured in the United States of America
First printing November 1984

This is a working document published informally by the World Bank. To present the results of research with the least possible delay, the typescript has not been prepared in accordance with the procedures appropriate to formal printed texts, and the World Bank accepts no responsibility for errors. The publication is supplied at a token charge to defray part of the cost of manufacture and distribution.

The World Bank does not accept responsibility for the views expressed herein, which are those of the authors and should not be attributed to the World Bank or to its affiliated organizations. The findings, interpretations, and conclusions are the results of research supported by the Bank; they do not necessarily represent official policy of the Bank. The designations employed, the presentation of material, and any maps used in this document are solely for the convenience of the reader and do not imply the expression of any opinion whatsoever on the part of the World Bank or its affiliates concerning the legal status of any country, territory, city, area, or of its authorities, or concerning the delimitation of its boundaries, or national affiliation.

The full range of World Bank publications, both free and for sale, is described in the *Catalog of Publications;* the continuing research program is outlined in *Abstracts of Current Studies.* Both booklets are updated annually; the most recent edition of each is available without charge from the Publications Sales Unit, Department T, The World Bank, 1818 H Street, N.W., Washington, D.C. 20433, U.S.A., or from the European Office of the Bank, 66 avenue d'Iéna, 75116 Paris, France.

An associate of the Center for Population Studies of The Population Council, New York, Mead Cain is a consultant to The World Bank.

Library of Congress Cataloging in Publication Data

Cain, Mead.
Women's status and fertility in developing countries.

(World Bank staff working papers ; no. 682)
Bibliography: p.
1. Family size--Developing countries. 2. Sex of children, Parental preferences for--Developing countries. 3. Women--Developing countries--Economic conditions. 4. Fertility, Human--Developing countries. I. Title. II. Series.
HQ762.D44C35 1984 304.6'32'091724 84-22109
ISBN 0-8213-0446-1

FOREWORD

This paper is one in a special series of World Bank Staff Working Papers on population change and development. Prepared as background papers for the World Development Report 1984, they provide more detailed treatment and documentation of the issues dealt with in Part II of the Report. The papers cover a range of topics, including the effects of fertility and mortality, the links between population growth and internal and international migration, and the management, financing, and effectiveness of family planning programs. They include several country and regional studies of fertility change and population policy.

The background papers draw on a large number of published and unpublished studies of individual researchers, on Bank policy analysis and research, and on reports of other organizations working on population and development programs and issues. The papers are the work of individuals and the views and interpretations expressed in them do not necessarily coincide with the views and interpretations of the Report itself.

I hope these detailed studies will supplement the World Development Report 1984 in furthering understanding of population and development issues among students and practitioners of development.

Nancy Birdsall
Staff Director
World Development Report 1984

Some of the Papers in the Population and Development Series

Ainsworth, Martha. Family Planning Programs: The Clients' Perspective. World Bank Staff Working Paper no. 676.

Bulatao, Rodolfo A. Expenditures on Population Programs in Major Regions of the Developing World: Current Levels and Future Requirements. World Bank Staff Working Paper no. 679.

Bulatao, Rodolfo A. Reducing Fertility in Developing Countries: A Review of Determinants and Policy Levers. World Bank Staff Working Paper no. 680.

Cain, Mead. Women's Status and Fertility in Developing Countries: Son Preference and Economic Security. World Bank Staff Working Paper no. 682.

Gwatkin, Davidson. Mortality Reduction, Fertility Decline, and Population Growth: Toward A More Relevant Assessment of Relationships Among Them. World Bank Staff Working Paper no. 686.

Herz, Barbara. Official Development Assistance for Population Activities: A Review. World Bank Staff Working Paper no. 688.

McNicoll, Geoffrey. Consequences of Rapid Population Growth: An Overview. World Bank Staff Working Paper no. 691.

Sapir, Andre. Some Aspects of Population Growth, Trade, and Factor Mobility. World Bank Staff Working Paper no. 694.

Standing, Guy. Population Mobility and Productive Relations: Demographic Links and Policy Evolution. World Bank Staff Working Paper no. 695.

Tan, Jee-Peng, and Michael Haines. Schooling and Demand for Children: Historical Perspectives. World Bank Staff Working Paper no. 697.

Trussell, James, and Anne R. Pebley. The Potential Impact of Changes in Fertility on Infant, Child, and Maternal Mortality. World Bank Staff Working Paper no. 698.

Zachariah, K.C., and Sulekha Patel. Determinants of Fertility Decline in India: An Analysis. World Bank Staff Working Paper no. 699.

Zachariah, K.C. The Anomaly of the Fertility Decline in India's Kerala State: A Field Investigation. World Bank Staff Working Paper no. 700.

Abstract

This paper examines the relationship between women's status--defined in terms of the degree to which they are economically dependent on men--and fertility in developing countries. The paper adopts a particular theoretical perspective regarding fertility determinants in developing countries and explores the implications of women's status within that context. This perspective gives special attention to the value of children as security assets in settings where public welfare assistance is minimal or non existent and financial and insurance markets are poorly developed. In this context, women's economic status, and the institutional factors that create a particular degree of dependence, determine the relevance of sex of children in defining security goals. In societies where women are highly dependent on men, security goals will, of necessity, be defined in terms of surviving sons; where women are relatively independent economically, it is more likely that children of either sex can serve security goals. Given similar security needs, and other things being equal, fertility will be considerably higher in settings where there is a strong preference for sons than in settings where son preference is weak. A cross-national empirical analysis is presented that lends support to this argument.

Acknowledgements

Comments on an earlier draft of this paper by Judith Bruce, Ethel Churchill, Odile Frank, Judith Heyer, and Geoffrey McNicoll are gratefully acknowledged. The figures were prepared by Adrienne Lindgren.

Condensé

Cette étude examine le rapport qui existe entre la situation de la femme - définie selon son degré de dépendance à l'égard de l'homme - et la fécondité dans les pays en développement. Partant d'un certain point de vue théorique en ce qui concerne les éléments dont dépend la fécondité dans les pays en développement, elle analyse les implications qu'il comporte pour la situation de la femme. Selon ce point de vue, dans un contexte où l'aide sociale est minime ou inexistante et où les marchés financiers et l'assurance sont peu développés, l'enfant revêt une importance particulière en tant que source de sécurité. A cet égard, l'importance du sexe des enfants pour la définition des objectifs en matière de sécurité est fonction de la situation économique de la femme et des facteurs institutionnels qui créent pour elle un certain degré de dépendance. Dans les sociétés où les femmes sont fortement tributaires des hommes, l'objectif de sécurité se traduit nécessairement par le nombre de fils vivants; en revanche, lorsque les femmes jouissent d'une certaine indépendance économique, le sexe des enfants a moins de chances d'intervenir dans la définition des objectifs de sécurité. Toutes choses étant égales par ailleurs, si l'on suppose des besoins de sécurité similaires, la fécondité sera beaucoup plus élevée dans une société qui accorde une nette préférence aux fils que dans une autre où cette préférence est moins marquée. Une analyse empirique effectuée dans plusieurs pays corrobore ce point de vue.

Extracto

En este documento se examina la relación entre la situación de la mujer --definida en función del grado en que dependen del hombre en el aspecto económico-- y la fecundidad en los países en desarrollo. Se adopta una determinada perspectiva teórica con respecto a los determinantes de la fecundidad en estos países y se exploran las repercusiones de la situación de la mujer en ese contexto. Con esta perspectiva se presta especial atención al valor de los hijos como elemento de seguridad en situaciones en las que la asistencia pública en asuntos de bienestar es mínima o inexistente y los mercados financieros y de seguros están poco adelantados. En este contexto, la situación económica de la mujer y los factores institucionales que crean un determinado grado de dependencia determinan la importancia del sexo de los hijos para definir metas de seguridad. En las sociedades en que las mujeres dependen mucho de los hombres, las metas de seguridad se definirán, necesariamente, en términos del número de hijos varones que sobrevive; cuando las mujeres tienen una relativa independencia económica, es más probable que los hijos de ambos sexos sirvan a estos fines. Con necesidades similares de seguridad y a igualdad de los demás factores, puede considerarse que la fecundidad es más elevada en ambientes en que hay una marcada preferencia por los hijos varones que cuando esta preferencia es débil. Se presenta un análisis empírico en varios países que apoya este argumento.

Contents

		Page
I.	Introduction	1
II.	A Partial Theory of Fertility	2
	1. Children as security assets	2
	2. A safety-first model of fertility	4
	3. Economic development and fertility decline	6
III.	Women's Status and Fertility	9
	1. Economic dependence: Son preference and patriarchal risk	9
	2. Example: Bangladesh and South India	11
	3. Family structure: Boundaries of the corporate group	17
	4. A structural perspective on women's economic status	25
IV.	Framework for Empirical Analysis	30
	1. Direct effects of patriarchal structure	30
	2. Indirect effects of patriarchal structure	34
	3. Empirical application: Age difference between spouses	38
	4. Preference for sons	47
V.	Conclusion	55
Notes		60
Appendix		67

I. Introduction

The task of assessing the significance of the "status of women" as a determinant of fertility in developing countries encounters certain difficulties that are common to all reviews of the relationship between a particular explanatory variable and fertility. In all cases one is confronted by a large body of literature, with no common theoretical foundation, which includes work at different levels of analysis, from different parts of the world, of widely varying quality. The majority of empirical work is oriented toward generating measures of statistical association between variables; however, interpretation of statistical relationships is impeded by the lack of theory and a generally poor understanding of local cultural and institutional contexts. Additional complications arise in a review of work in which "the status of women" is the variable of primary interest. In part these derive from the elusiveness of the concept itself -- there seems to be no common or ready understanding of what is meant by "the status of women" -- and in part because work in this area often produces an uneasy mixture of positive analysis and normative prescription.

This paper adopts a particular theoretical point of view regarding fertility determinants and examines the implications of women's status for fertility within that context. The theory, which is briefly outlined in the first section of the paper, gives special attention to the value of children

as security assets in developing country settings. This perspective can be contrasted with conceptual frameworks that put great emphasis on the near-term costs of children to parents, often to the exclusion of later security concerns. The paper also focuses rather narrowly on one dimension of women's status -- women's economic dependence on men -- that is particularly relevant to reproductive behavior in the context of the "safety-first" model of fertility. Women's economic dependence is viewed as a consequence of patriarchal structure: elements of the institutional setting that serve to restrict the economic independence of women. The relationship between women's economic dependence and fertility, and the relevance of family structure to this relationship, are discussed in the second major section of the paper. Women's economic dependence is thought to influence fertility primarily through associated parental preferences for the sex of children. The final section presents a cross-national analysis of women's status, its social structural antecedents, and fertility with the use of World Fertility Survey data.

This paper does not attempt to systematically survey the literature on women's status and fertility. For such a survey the reader is referred to an excellent recent critical review by Mason.[1]

II. A Partial Theory of Fertility[2]

1. Children as security assets. In those parts of South Asia that I have studied, all indications -- from individual responses to such questions as why sterilization is delayed until a particular parity and child-sex composition have been achieved; from instances of misfortune befalling aging

parents who do not have a surviving son to depend on; or from evidence of the insecurity of property rights, widespread failure of financial and insurance markets, and absence of important extrafamilial welfare institutions -- point to the salience of parental security concerns for reproductive strategies.[3]

In rural South Asia (and, indeed, most other parts of the developing world), where financial and insurance markets are poorly developed and there is no tradition of extrafamilial welfare institutions, children have a number of desirable properties as security assets. Most importantly, with respect to security for elderly parents, they fulfill the need for an annuity. Uncertainty about length of life and the period and severity of debility that may precede death requires an investment that yields an assured income for an indefinite period. A strategy of asset accumulation followed by dissaving is not responsive to this requirement. Although the accumulation of wealth will clearly contribute to security in old age, one can rarely be certain that contingencies, such as unusual longevity, will not arise for which the sale of a fixed quantity of assets will prove to be inadequate.

Many amenities and necessary services illustrate the desirability of receiving "annuity payments" in the form of labor, and argue for the superiority of children as a security investment. A partial list might include health care, food preparation, and companionship. (The labor in these instances is more likely to be provided by a son's wife than by a son.) Although one could conceivably obtain some of these services in the market, they would be highly imperfect substitutes for those provided by kin.

Children, of course, are neither costless nor risk-free investments. They may die or become disabled; and they may refuse to honor their

obligations to parents. Despite the risks entailed in investing in children as security assets, however, they embody qualities that set them apart. First among these is the quality of support they provide to parents, which is another way of acknowledging the central position of the family in developing societies. Life without family is barely worth living. Although the maintenance of an adequate level of subsistence in old age represents an important goal, individuals aspire to a good deal more. They may aspire as much or more to their due as elders: deference from others, comfort, peace, and companionship. For such "commodities" there are clearly no substitutes for their children and their children's families. Second is the versatility of children as security assets in settings where insecurity is rife and derives from many different sources, of which the process of aging is only one. Third, in many settings the security of land, a potential alternative to children as a "second best" annuity, and of income derived from land is in doubt. In such circumstances, children may, in fact, serve as an important means of insuring against property loss.

2. A safety-first model of fertility. Accepting the proposition that parents in most developing countries place a high value on children as security assets, how does one best incorporate this into models of reproductive decision-making? One class of decision models, which draws partially on bounded rationality theory, seems particularly promising in application to old-age security concerns and reproductive decisions: lexicographic decision rules based on the criterion of "safety-first" (LSF).[4] Developed to study innovation adoption behavior of farmers, LSF models assume that farmers, in making production decisions, are motivated not only by a

desire to maximize net returns, but also by the condition that net returns not fall beneath some specified "disaster level."

In the case of reproductive decisions, assume that parents wish to maximize "utility" subject to the chance constraint that the probability of inadequate support and quality of life in old age is less than or equal to some target probability. Here, the first priority is to make adequate provision for the future with reasonable certainty. Only after this constraint is satisfied do parents concern themselves with the fertility implications of the more familiar time and commodity costs and benefits of children.

The LSF model as applied to reproductive decisions suggests that parents define minimum requirements for old-age security in terms of a certain number of surviving children. Suppose, for example, that this minimum is one healthy and loyal surviving son. The fertility level that is consistent with this goal will depend primarily on the probability of child survival and the probability of child default. The higher the level of child mortality, the greater the fertility necessary to achieve the goal. Similarly, concern over child default should induce higher fertility than if there were no such concern.[5] Mortality and default risks may cause the operational "rule of thumb" to be revised upward, such that two sons surviving through infancy becomes the goal. In particular developing societies, the way in which targets are defined, and thus their implications for fertility strategies, will depend on several factors. For example, societies vary in the extent to which sex of offspring is relevant to framing targets. For some societies, only sons will do, while in others it may only be necessary to have x surviving children, irrespective of sex.

The target may be adjusted upward in response to the need for additional insurance against other contingencies.[6] For example, if the security of property rights is dependent upon strength in numbers, the target may be raised from two sons to three. Culturally determined restrictions on the economic activities of women may create dependency that places them at extraordinary risk in the event of widowhood or divorce, and thus have a similar effect. The presence of additional sources of risk would not necessarily require an adjustment in the target, however. It could well be that the target set for old-age security is sufficiently high to satisfy additional needs. Nevertheless, multiple sources of risk would serve to reinforce reproductive goals and increase the significance of attaining them.

3. Economic development and fertility decline. How would one's expectations about change in fertility in response to economic development differ with the LSF model as compared to competing theories?

According to the relative child cost framework developed by Peter Lindert[7], an improvement in infant and child mortality should have an unambiguous negative effect on the relative cost of children because time costs in particular are heaviest in the first few years of a child's life, while the returns from child labor do not begin to accrue until after the period of highest mortality risk. On the other hand, in the LSF model an improvement in infant and child mortality would, other things being equal, reduce the number of births needed to achieve the security target. Unless this number exceeded the level of natural fertility, one would expect an improvement in mortality to have a negative effect on fertility.

According to the LSF model, change in the time and commodity costs of child rearing or in the value of child labor can be expected to exert a negative influence on fertility only if fertility exceeds the level associated with the security target. If fertility is less than or equal to the target level, such change should have no impact on demand for children or fertility. Suppose, for example, that the absolute value of children (considering only costs and returns up to age 15 or 20) is negative. One can imagine several sources of change that would make children even more costly: for example, an increase in female wages or labor force participation that raises the time costs of children, or technological change that erodes the market for child labor, thus reducing the potential contributions of children. These changes, however, could quite plausibly leave the target unaffected, and thus have no effect on fertility: the cost of insurance will have risen; yet the need for insurance will remain. According to the Chicago School microeconomic theory of fertility, on the other hand, an increase in the absolute or relative cost of children should, ceteris paribus, decrease the demand for children and result in an appropriate adjustment in fertility. The operation of a security constraint, such as described by the LSF model, may help to explain the disappointing results of empirical tests of microeconomic models in developing countries, and the failure to discover, for example, a consistent and significant relationship between women's work activity and fertility.[8]

Reductions in the target itself could be produced by elimination or moderation of sources of risk, or the replacement of children by other sources of insurance, or some combination of these. Administrative and political development, for example, may eliminate the need for the political

self-insurance that a large family provides. Growth in income and savings opportunities may reduce dependence on children for security. However, even with income growth, as long as insurance and financial markets remain badly incomplete, children will not be easily displaced as primary sources of security.

In settings characterized by multiple sources of serious risk for which children represent the best or only means of insurance, the target for surviving children may be particularly resistant to change. If little separates the targets implied by different sources of risk, then all sources must be moderated in order to induce a fertility response.

The LSF model suggests a different pattern of fertility transition from that experienced in the West and depicted by conventional demographic transition theory. The latter describes a smooth and irreversible transition from high to low fertility. By contrast, the LSF model suggests a two-stage transition. In the first stage, fertility adjusts to a new mortality regime. The very sharp and nearly global improvements in mortality that followed World War II in many cases decreased the level of fertility necessary for achieving security goals. (The targets themselves need not have been altered.) The extent of fertility decline in the first stage will vary from society to society depending on the extent of mortality decline and the level of the security target. The second stage of fertility transition is triggered by change that reduces the target itself: that is, improvement in the environment of risk and/or development of alternative sources of insurance. In exceptional cases, postwar economic development will have been so rapid that the two stages merge together and produce an unbroken transition from high to low fertility (as in Singapore, for example). More

typically, however, fertility will remain at an intermediate level between the first and second stages, possibly for a considerable period.

There is evidence, partial and incomplete because of data shortages and the recency of declines, that after an initial period of quite rapid decline, fertility has, indeed, leveled off considerably above replacement rates in many developing countries. Among those countries with relatively good data, Sri Lanka (total fertility rate of 3.8), Tunisia (5.3), Costa Rica (3.8), Fiji (3.4), and Malaysia (4.0) are examples.[9] Moreover, the fertility levels at which these plateaus occur vary from country to country. I suggest that an explanation for these developments -- both the plateau phenomenon and variation in level of plateau -- may lie in the safety-first model sketched above.

III. Women's Status and Fertility

1. Economic dependence: Son preference and patriarchal risk. Women's status is relevant to the safety-first model in two important ways. The first relates to the definition of security targets: whether or not the sex of offspring is relevant to framing such targets. In societies in which women are relatively independent economically, in which they share relative equality with men with respect to economic opportunity and control of property, parents will be more indifferent about the sex of offspring vis a vis insurance and security. In societies in which women are more dependent on men, where they are excluded from mainstream economic activities, parents will place a greater premium on sons. Other things equal, the fertility level implied by a necessity for sons will be considerably higher than the

level implied by a security target that can be satisfied by children of either sex. The second way in which women's status enters the model is as a distinct source of risk for which additional insurance may be needed. Economic dependence on men can entail special risks for women -- risks that are independent of other sources, such as natural disasters or the process of aging to which both men and women are exposed. Widowhood, divorce, separation, or incapacitating illness of the husband represent threatening events in situations in which women are excluded from mainstream sources of income and are thus prevented from providing for themselves through their own labor and enterprise. An important source of insurance against the risk of losing the economic support of a husband is sons. The greater the economic dependence of women on men, the greater the salience of this source of risk.

Both son preference and "patriarchal risk" stem from the same cause: the relative economic dependence of women. They do not, however, have the same consequences for fertility. Of the two, son preference may be viewed as the more significant, because it affects target-setting irrespective of source of risk. If there is a necessity to have sons in order to achieve security goals, rather than children of either sex, this requirement will hold for old age security and other contingencies, as much as for insurance against patriarchal risk. With respect to the risks which dependent women face, as noted in the previous section, it could well be that the fertility level consistent with the target set for old-age security is sufficiently high to satisfy the demand for insurance created by such risks. Rather than implying a higher level of fertility, therefore, the presence of patriarchal risk may only serve to reinforce reproductive goals and make them more resistant to change.

If one takes a broad view, and considers in retrospect the whole of the developing world at the conclusion of World War II, the status of women -- understood to mean the degree of economic dependence of women on men -- was probably the single most important predictor (other than mortality decline) of subsequent experience in fertility trends. This is because it quite likely was (and is) the single most important determinant of level of security target. As we shall see below, those societies whose fertility has declined the most are, in general, societies in which women had the greatest economic independence and where, therefore, the "intrinsic" security target was the lowest at the onset of mortality decline. Post-war mortality decline served, I would argue, to "reveal" these targets, and permit fertility to adjust accordingly. The extent of mortality decline has not, of course, been uniform throughout developing regions. Most notably, mortality decline has been least extensive in sub-Saharan Africa. Relatively high mortality, extraordinary levels of infertility[10] (which, in the LSF model would have the same effect as mortality), and aspects of African family structure take precedence in this region, and exempt it from the generalization regarding the status of women.

2. Example: Bangladesh and South India. A comparative analysis of a village in Bangladesh and several villages in Maharashtra and Andhra Pradesh States of India will serve to illustrate the significance of women's dependence on men.[11] Both regions are agricultural and comparably poor. There is no difference in the dependence of the elderly on their children for support in the two areas. The opportunities for the productive employment of

children do seem to be greater in the Bangladeshi village, but even there the productivity of children does not appear sufficient to warrant unlimited fertility. Yet, while there is practically no birth control in the Bangladesh setting, many couples in the Indian villages have acted to limit their fertility. There is, moreover, evidence of the beginnings of a fertility decline in both Maharashtra and Andhra Pradesh.

A major difference in the environment of risk in the two settings centers on women. The economic freedom and opportunities of women in rural Bangladesh are much more severely restricted than those of women in the three Indian villages. There is a pronounced division of labor by sex in both areas; however, the division that has evolved in rural Bangladesh effectively excludes women from all the most important sources of wage employment and from activities that would permit them to cultivate or supervise the cultivation of their own land. Women are not permitted to seek employment in any of the field operations for the main crops of paddy and jute, which provide the bulk of wage employment opportunities in rural Bangladesh.

The situation of women in the three Indian villages is quite different. In contrast to rural Bangladesh, women in the Indian villages are not excluded from participating in field operations and there is a high demand and active wage labor market for tasks that women specialize in. Women on their own in the Indian villages can provide for themselves, either by selling their labor or cultivating their own land. It may not be easy, and the resulting standard of living may be lower than if the woman had a man as her partner, but it is possible.

What is the fate of women in these two settings who have lost their

husbands and have no other mature males on whom they can depend? In a sample of 114 households from the Bangladesh village, of 14 women widowed in unfavorable circumstances, ten were left with some land at the time of their husbands' death and four were landless. Of the ten who had land at one time, all subsequently sold or otherwise lost at least some of their land, and four lost all of it. Of the four who were initially landless, one became a beggar and all are destitute. In a sample of 119 households in the three Indian villages, of 12 women widowed under similar circumstances, three were landless at the time of their husbands' death and nine were left with some land. In contrast to the widows in Bangladesh, of these nine, only one subsequently lost or sold land, and the three landless widows manage to subsist on their own, one through agricultural wages and two through small-scale trading.

The ability of women in the Indian villages to provide for their own subsistence is not the only reason why these widows were able to hold on to their land and maintain a relatively stable life after their husbands died, but it is undoubtedly an important factor. While the presence of mature sons would have made life more comfortable, their absence did not precipitate the sharp declines in welfare experienced by widows in the Bangladesh village. In the Bangladesh setting, there is a greater incentive for women to produce sons, because they have much more to lose if they do not. Similarly, with respect to other security needs, including those in old age, one can conjecture that conditions in Bangladesh lead to a greater premium for sons than is the case in south India.

A recent paper by Dyson and Moore permits an extension of this analysis to provide a more comprehensive view of regional patterns of women's status

in relation to fertility in South Asia[12]. They identify and contrast "north" and "south" Indian patterns of kinship and female status. In their scheme, the situation of women in Bangladesh corresponds roughly to the north Indian pattern, and that of women in Maharashtra and Andhra Pradesh to the south. The three major principles of north Indian kinship are village and kin exogamy, relatively close ties between patrilineally related males, and control of property by males. By contrast, in the south, endogamy is more common, males' ties with affines (those related through marriage) are stronger, and women may inherit and transfer property rights. In the north there is greater control of female sexuality both through the kinship rules mentioned above and through the seclusion of women and various other restrictions on their freedom of movement and interactions with others. There are associated north-south differences in the economic activity of women, female age at marriage, family planning prevalance, and fertility, as shown in Table 1.

Dyson and Moore identify "female autonomy" as the key variable distinguishing the north from the south. Female autonomy is defined as "the capacity [of women] to manipulate [their] environment. Autonomy indicates the ability — technical, social, and psychological -- to obtain information and to use it as the basis for making decisions...(p. 45)". In linking female autonomy to fertility behavior Dyson and Moore emphasize the scope that autonomy offers for innovative action and independent decisions. This emphasis, which the authors share with a number of other interpretations of the relationship between women's status and fertility, is, I believe, misplaced. The suggestion is that fertility is higher in the north than the south because northern women do not have the freedom and independence to act

BEST COPY AVAILABLE

Table 1 State-level Indexes Related to Women's Status, Family Planning and Fertility in India

Region/state	Percent of couples protected by family planning	Female labor force participation rate, 1971	Percent of women practicing purdah	Percent of females literate, 1971	Index of son preference	Total fertility rate (TFR)	Female age at first marriage	
							1961	1971
South								
Kerala	28.8	13	4.3	54.3	17.2	5.43	20.1	20.9
Tamil Nadu	28.4	15	4.9	26.9	11.5	4.97	18.4	19.6
Andhra Pradesh	26.5	24	9.4	15.7	8.9	4.88	15.4	16.4
Karnataka	22.4	14	5.4	20.9	11.2	5.68	16.5	17.9
Maharashtra	34.7	20	16.7	26.4	18.4	5.16	15.9	17.5
North								
Gujarat	20.1	10	41.8	24.7	20.8	6.19	17.2	18.3
Rajasthan	13.0	8	62.2	8.5	n.a.	6.32	14.6	15.4
Uttar Pradesh	11.5	7	46.4	10.7	25.0	6.85	14.8	15.6
Madhya Pradesh	20.9	19	42.9	10.9	21.9	6.38	14.3	15.2
Punjab	25.0	1	44.6	25.9	31.3	6.32	17.6	20.1
Haryana	30.1	2	72.6	14.9	20.7	6.68		16.6
East								
Bihar	12.2	9	29.6	8.7	24.3	5.01	14.7	15.5
West Bengal	21.2	4	n.a.	22.4	18.4	4.42	16.1	17.8
Orissa	24.4	7	27.7	13.9	15.7	5.65	16.5	17.2
All India	22.1	12	n.a.	18.7	20.2	5.78	16.1	17.2

Source: Dyson and Moore, 1983, Tables 3 and 5, cited in note 12.

on their own behalf. This presumes that fertility levels in the north reflect male fertility preferences and that male and female preferences diverge. The difficulty with this construction is that it ignores one important aspect of family structure: despite gender inequality, the conjugal unit is also a corporate unit in this region and, therefore, men and women in the same family share many common interests and concerns. Given a corporate structure, the kind of divergence in reproductive goals implied by Dyson and Moore is unlikely to occur. A more plausible link between gender inequality or female autonomy and fertility operates through security needs and the premium on sons that derives from women's position of economic dependence.

Female age at marriage, differences in which clearly underly much of the difference in total fertility between the north and the south, must be treated separately in my view. Decisions about age at marriage and choice of partner remain the province of the elder generation in both the north and the south. Control over marriage decisions is thus not a part of the autonomy of women in the south. Early female age at marriage, evident in north India, is a principal means by which the control of women is effected, and as such should be thought of as one part of an integral system of patriarchal control (see the case of Bangladesh described below). In the south, where there has historically been less concern over control of women's sexuality, and where kinship structure and social organization are such as to permit women greater economic independence and freedom, there is greater inherent flexibility in age at marriage. Because the control of women is not at stake (to the same degree as in the north), female age at marriage is relatively free to respond to new educational and economic opportunities.

3. Family Structure: Boundaries of the corporate group. As suggested in the previous section, an appreciation of the corporate nature of the family is essential in interpreting the relationship between women's status and fertility. Too often analyses that focus on women's status abstract from the corporate context of the family, and therefore overlook the fact that regardless of tangible indications of inequality between men and women, women's welfare and interests are closely aligned with the corporate interests of the family as a whole.[13] This perspective underlies my difference with Dyson and Moore's interpretation of the relationship between women's autonomy and fertility in India and also reservations that I have concerning Caldwell's analysis of the "situational advantage" of patriarchs and its significance for fertility in developing countries.[14]

It is equally important, however, to note that the boundary of the corporate family group is not the same in all developing societies. In Asia this boundary typically encompasses the nuclear family unit -- husband, wife and children. Although the system of family formation that characterizes this region is aptly labeled "joint", [15] and while most nuclear family units experience periods of extension in their developmental cycles, the majority of households at any given time will nevertheless be nuclear in structure. The relatively high degree of corporateness that is typical of the conjugal unit in Asia is, however, characteristic of neither sub-Saharan Africa nor of Caribbean (and some Latin American) societies.

In the "Caribbean" family system the conjugal bond is relatively weak: formal marriage is the exception rather than the norm, a substantial part of reproduction occurs outside of marriage or stable unions, women often experience a series of unions with different men over the course of their

reproductive lives, and the biological father often bears little or no financial responsibility for his children.[16] In much of sub-Saharan Africa, the conjugal bond also tends to be weak. There, however, the locus of reproductive decisions, and the appropriate referent when considering the costs and benefits of children, is the larger kin group rather than one or another parent, as in the case of the Caribbean family system, or the conjugal unit, as in Asian family systems.[17]

In both sub-Saharan Africa and the Caribbean, women have a relatively high degree of economic autonomy. Indeed, the kind of economic dependence that is characteristic of women in Bangladesh is, from a functional standpoint, inconsistent with a system in which a weak conjugal bond is the norm. However, while these regions would tend to be at the lower end of an international scale of female dependence and therefore relatively free of the fertility incentives associated with a high degree of dependence, aspects of family structure in the two regions introduce other pronatalist forces. In the case of the Caribbean, the fact that a father may share in the benefits of reproduction while avoiding the costs creates the possibility of a "free rider" situation.[18] In sub-Saharan Africa, although there are some similarities to the Caribbean with respect to conjugal relations, it is the greater size of the corporate group that is of most significance as a pronatalist force. The cases of Jamaica and Ghana illustrate how family structure in the two regions may operate to induce high fertility.

- Jamaica. Female labor force participation, female literacy, and female educational attainment in Jamaica are among the highest in the developing world. Fertility has been relatively slow to decline, however,

and current estimates indicate a TFR of approximately 4 births per woman. In international perspective, Jamaica's sluggish fertility transition is a puzzle because it seems out of line not only with the indicators of "female status" mentioned above, but also with levels of per capita income, urbanization (50% of the population lives in urban areas), health and mortality. Some understanding of the relatively high fertility of Jamaican women can be obtained by considering the problem from the perspective outlined above. Jamaica conforms to the "Caribbean" family system: most Jamaican women spend a majority of their reproductive lives in visiting and consensual unions with men.[19] In a visiting union a man will typically not bear responsibility for the costs of rearing children that he has fathered; these costs are borne by the woman. A man may participate in more than one visiting union simultaneously; and a woman will often experience a series of visiting unions during her reproductive life. Typically there will be a shift toward a more stable union in the later phase of the reproductive span: a visiting union is transformed into a consensual union or marriage.

The Caribbean system of reproductive organization generates "free rider" problems and externalities that are far in excess of the more typical pattern of domestic organization associated with universal and early marriage and corporate households built around nuclear families. Men are motivated to father children in visiting unions in order to demonstrate virility; something on which a high social value is placed. Their behavior is, however, uninhibited by child cost constraints. Women wish to avoid the stigma of infertility and are thus likewise motivated to reproduce at an early stage. Bearing a man's children is, moreover, an important step toward establishing a more stable union. Marriage is something that women have

vested interest in, because, despite high rates of labor force participation by international standards, women face a segmented labor market and are shunted into lower paying, less secure forms of employment in the Jamaican economy. Marriage, therefore, represents the prospect of greater financial security for a woman and her children through access to a man's superior employment opportunities and earnings. In this setting women are very likely motivated to reproduce at levels in excess of those dictated by child costs alone. These incentives are a product of women's subordinate position in the society and economy, the uncertainty that they face with respect to the stability of unions and their economic security, and the male-biased ideology that sustains this family system and the attendant inequitable distribution of child costs within unions.

• The Kwahu of Southern Ghana.[20] The Kwahu are an Akan sub-group who live in southern Ghana. Ghana as a whole is notable both for its high fertility and the high rates of female economic participation. Kwahu is a matrilineal society whose people are engaged primarily in farming and trading. Marriage among the Kwahu is not a highly valued institution. Conjugal rights and duties are ambiguous:

> "There are no clear rules as to where the husband, the wife and the children should stay, how much husband and wife should contribute toward the upkeep of the family, where exactly the father's authority over the children lies and where that of the mother and mother's brother, with whom the children are to stay after divorce or after the death of one of the parents, etc." (pp. 22-23)

There are also few positive or negative sanctions that enforce adherence

to marriage norms:

> "Sexual satisfaction can be obtained outside marriage virtually without public disapproval. There is no such thing as illegitimacy. Children belong by definition to their mother's lineage...
>
> "Summarising, one could say that the institution of marriage is fragile and viewed with lukewarm feelings. Primordial attachment and dependence lies in most cases with the matrilineage and not with the conjugal partner. A norm which is <u>not</u> ambiguous is that in conflicts people must side with their matrilineage, if need be against their partner in marriage."(p. 23)

The high degree of marital instability and the marginality of husbands in the Kwahu system produce a free rider problem similar to that found in the Caribbean:

> "After divorce men often do not support their children at all, or stop doing so after some time has passed. Meanwhile a man who marries a divorcee will not expect to contribute to the maintenance ... of any of his wife's children by a previous marriage. Thus men, since they can more easily shed past parental responsibilities, may be less constrained to limit the number of births they beget..."(p. 26).

However, what distinguishes the Kwahu, and sub-Saharan Africa more generally, is the dominance of the lineage in matters of reproduction:

> "For a man to decide to have children is somewhat unreal. Strictly speaking, the child which he may decide to have will not be 'his' child but the child of his wife's lineage...
>
> "The influence of the matrilineage ... makes individual or conjugal decision making difficult and to some extent superfluous. The ties of marriage

are less important than those of descent. Lineage membership overrides all other social ties and permeates every aspect of daily life. More than anything else, reproduction is a matter of concern for the lineage. According to the matrilineal rule, women bear children to their own lineage and not to their husbands'. As men cannot themselves continue the descent of the lineage, they have to wait and see what the female members of their lineage bring forth. A woman who does not become pregnant will be pressed by her lineage to leave her husband and try her luck with another man" (pp. 27-28).

The lineage is not only the locus of reproductive decisions but also of reckoning the costs of reproduction. Thus in the event of divorce, a woman may receive direct financial assistance from her lineage. The practice of child fostering is also an important means of spreading the cost of reproduction within the lineage:

"The rearing of children by non-parental kin and others is a widespread practice in West Africa in general and Ghana in particular ... It is a practice which has a pervasive impact on the distribution of the costs and benefits of children, which are often spread between kin group members, with different individuals providing economic assistance, childcare or training at different points in the growing child's career, and with a variety of people benefiting from the child's help in domestic tasks, childcare, agriculture and trade" (p. 29)

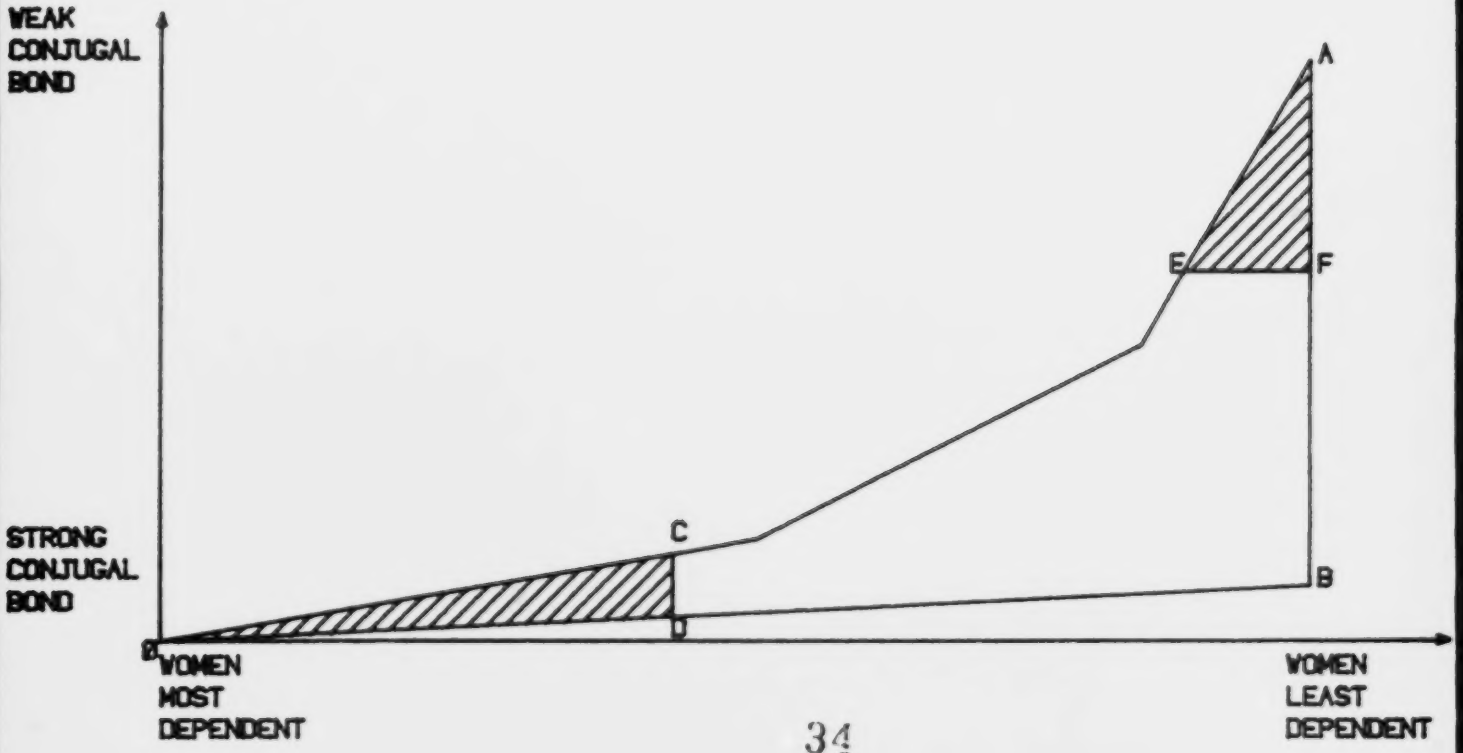
The Kwahu, and the Akan more generally, are unusual in their matrilineal kinship organization. The majority of societies in sub-Saharan Africa are characterized by patrilineal kinship systems. Despite the differences that distinguish patrilineal from matrilineal systems (the importance of

brideprice, for example), there are key similarities. Notably, in both systems conjugal ties tend to be subservient to lineage allegiance and, as evidenced by the ubiquitous practice of child fostering, the locus of reproductive decisions and benefit/cost considerations is the larger kin group rather than the nuclear family. A number of studies in Ghana and elsewhere in sub-Saharan Africa suggest that in some communities -- particularly among urban educated elites -- the strength of corporate lineage organization has diminished in the course of recent social and economic change. Nevertheless for the bulk of African populations corporate lineage groups would appear to remain a potent fact of social life.

To summarize, one can broadly distinguish three basic family types among developing countries according to the boundary of the corporate group: "Caribbean", where the boundary would normally encompass a mother and her children, but exclude the father(s); "Asian", where the boundary is coterminous with the nuclear family; and "African", where the boundary encompasses a larger kin group. The Caribbean and African versions share weak conjugal ties, while the conjugal bond is relatively strong in the Asian family. In both Caribbean and African systems, women are very active economically, in ways that permit considerable independence from men, while the Asian system accomodates a broad range of female economic activity levels and degrees of female dependence on men.

The relationship between family structure and women's economic dependence is shown schematically in Figure 1. The shaded cone in the lower left of the figure (OCD) represents the zone of highest patriarchal risk. Representative societies here, all of the "Asian" family type, would include

FIGURE 1. RELATIONSHIP BETWEEN THE ECONOMIC DEPENDENCE OF WOMEN AND FAMILY STRUCTURE



Bangladesh, north India, Pakistan, and the Muslim countries of north Africa and west Asia. Fertility tends to be high in this zone because of the economic dependence of women on men and the associated patriarchal risks and focus on sons for security. The shaded cone in the upper right of Figure 1 (EAF) is the zone of weak conjugal ties, occupied by Caribbean and African societies. Fertility may be resistant to change in this zone, despite the relative economic independence of women, due to free riders in the Caribbean and the predominance of lineage ties in Africa. The area closest to point B in Figure 1 is, ceteris paribus, most favorable for fertility decline. Most of south India and southeast Asia would be located in the non-shaded area, with countries such as Thailand and Sri Lanka located closest to point B.

4. A structural perspective on women's economic status. It is important to locate the analysis of women's status and fertility at the appropriate level of aggregation. It makes little sense to conduct household- or individual-level analyses of a variable that is properly measured at a higher level of aggregation. One can think of many individual-level measures of women's economic dependence on men; however, the factors that condition an individual's experience -- the sexual division of labor, labor market segmentation, inheritance rules, religious norms of behavior, rules of marriage and family formation -- are clearly located in a society's institutional structure. While one may observe substantial variation in the individual experience of women in a particular society, the distribution of such experience will be constrained by institutionally determined bounds. In important respects, therefore, women's status -- the extent to which they are economically dependent on men -- should be viewed as a structural phenomenon.

It is also important to keep in mind that in situations where women are highly dependent on men one is dealing with structured inequality: systems of stratification that give advantage to men over women. Corporate households notwithstanding, men benefit from their dominant positions in such systems and, just as with elites more generally, they have a vested interest in protecting their rank and the system that elevates them to positions of power and control. These interests represent a potentially powerful source of resistance to change, over and above the "dead hand of tradition."

Patriarchal structure, by which I mean the sum of institutional mechanisms that serve to limit women's economic autonomy relative to men's, may thus possess considerable inertia. When considering the prospects for change in any one element of patriarchal structure -- female age at marriage, for example -- one must reckon with the weight of the entire structure. The case of Bangladesh, sketched below, serves as an illustration.[21]

In rural Bangladesh male dominance is grounded in control of material resources and supported by interlocking and reinforcing elements of the kinship, political, religious, and economic systems. Powerful norms of seclusion extend to labor markets, severely limiting women's opportunities for independent income generation. Potential agents of change and sources of resistance to the current system are undermined by the interaction of age, sex and class hierarchies.

• Kinship. The custom of patrilocal marriage removes a newly married woman from her family of birth and places her in her husband's locality. Preference for lineage and village exogamy attenuates a woman's ties with her family of birth and reduces the possibility that her family will intervene on her behalf after marriage. Exogamy and physical separation also make it less

likely that a woman will claim her share of inheritance and more likely that her brothers will seize control of her share of inherited land regardless of her wishes. Arranged marriage and differences in age at marriage by sex of almost ten years place a woman in a subordinate position relative to her husband at the outset of marriage. Furthermore, evidence suggests that a woman does not receive a substantial dowry upon marriage: at the time of marriage, a woman is endowed with neither money nor property that is hers alone and that represents independent security.

• Political System. Men monopolize political power. Elected officials, administrators, and police are all men. Village councils (salish), which adjudicate most local disputes, are composed exclusively of men. Power brokers - villagers who have ties and influence with officialdom outside - are men. Solidarity groups (mallot), which gather on the occasion of members' marriages and deaths and at various religious festivals, are controlled and led by men. In part because of the male domination of political institutions and in part because formal judicial institutions and administration are weak, particularly in rural areas, legal protection of women (under either civil or Islamic laws) is nominal. If a female litigant in a land dispute, for example, is not closely identified with and supported by a man, she is likely to lose regardless of the merits of her case.

• Religion. Both as an ideology and as the normative force that channels behavior and expectations, Islam represents a strong apology for patriarchy. Islam is explicit about the sexual division of labor and responsibility and, in effect, sanctifies male dominance. According to Islam, man is the earner and woman is the server of man. Islam "clearly states that men and women have their own spheres of activity - a scheme of

functional division in accord with their respective natural dispositions and inherent physical and physiological qualities and characteristics."[22] Two further aspects of Islam as interpreted in Bangladesh have direct effects as instruments of patriarchal control: the laws of inheritance and the manifestations of purdah - the seclusion of women.

Muslim inheritance laws allow a daughter one-half the share received by a son. In practice, women frequently receive less than their rightful share under the law. Moreover, if a woman inherits land, her husband cultivates it (when accessible) as if it were his own. A number of observers have also noted a tendency for women to relinquish their share of inheritance to their brother(s) as a way of gaining favor and generating good will.[23]

Purdah is a "system of secluding women and enforcing high standards of female modesty."[24] Its manifestations in Bangladesh include severe restrictions on women's movements outside their immediate homestead (bari - which usually consists of an open compound surrounded and shielded by huts, foliage, and fencing) and standards of dress that hide their face and form. Women who move out of the homestead into the public "male space" are considered both provocative and offensive.

- The Division of Labor. The predicament of women who do not have men on whom they can depend and who must generate income on their own is that the same elements of patriarchal structure that force them into relative seclusion in the household compound also deny them access to most forms of market work. In Bangladesh, a division of labor among household members has evolved whereby women specialize in work inside or near the homestead (food processing and preparation, household maintenance, cultivation of vines and other crops located in or near the homestead, and animal husbandry) and men

specialize in work outside the home (rice and jute cultivation, trading, and other forms of market work). This division itself engenders a powerful element of partriarchal control over women, enforcing women's dependence on men by denying them direct access to income-earning opportunities. The sexual division of labor applies in large part to all women, regardless of economic status or household structure. As a consequence, women are totally excluded from most agricultural wage employment, and the costs, in terms of abuse and loss of status, of engaging in other types of work that require movement outside the homestead (e.g. petty trading) are very high indeed.

- Interlocking Hierarchies. The final element of patriarchal control in the Bangladesh setting derives from the interaction of age, sex, and class hierarchies. Among women, solidarity and potential resistence are undermined by an age hierarchy that allies older women with patriarchal interests and by class differences between women. The young bride enters her husband's household to find herself under the control and supervision of her mother-in-law. In general, older women dominate younger women -- mothers-in-law dominate daughters-in-law, elder brothers' wives dominate younger brothers' wives, and so on. This age stratification among women allies older women with partriarchal interests (because both share domination and exploitation of younger women) and also gives younger women something to look forward to with advancing age. Similarly among poor men, for whom the material benefits of patriarchy are less than for the relatively rich, and whose well-being might improve if their wives could find more and better employment, potential resistance is blunted by their position of dependence in the class hierarchy.

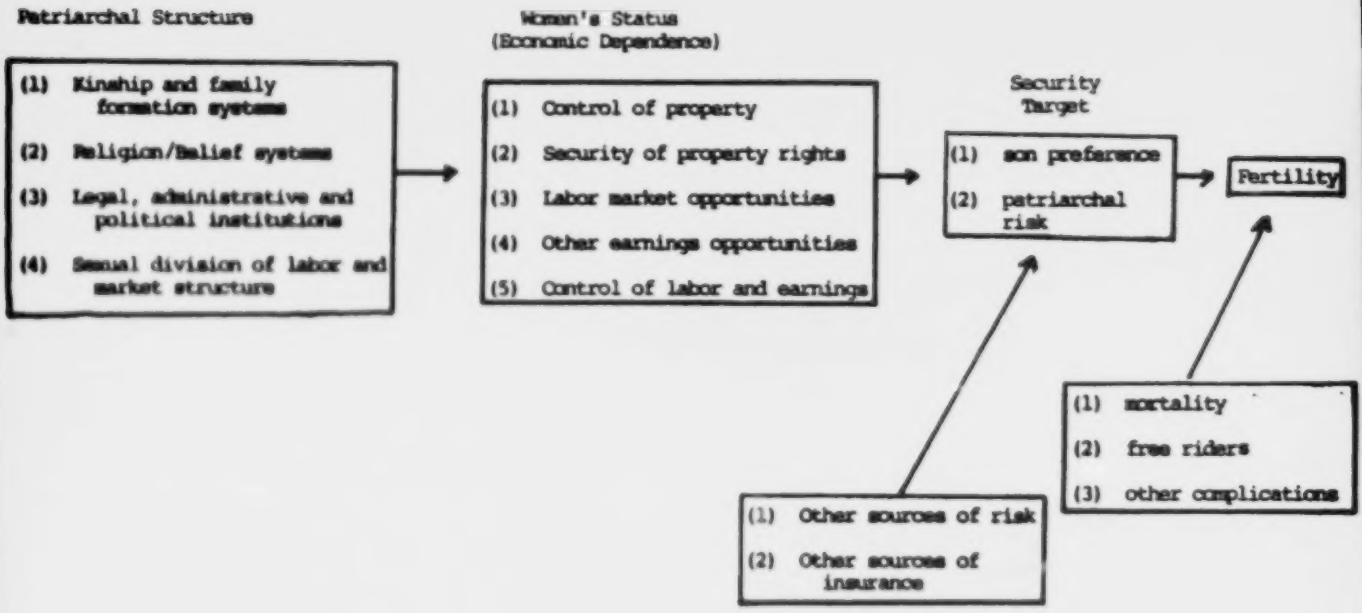
Bangladesh unquestionably occupies an extreme position among developing

countries with respect to strength of patriarchal structure. (This is not to say that Bangladesh is an isolated case: in broad outline Pakistan, much of North India, West Asia, and North Africa are similar in patriarchal structure). Even a casual survey of other societies reveals a range of institutional arrangements that are less restrictive of women and that permit a greater degree of economic freedom and independence than is the case for Bangladesh. For our purposes, the question of why different institutional arrangements have evolved in different regions of the developing world is not so important. What is important is to note that particular patriarchal structures have deep historical roots, and that the pattern of variation in patriarchal structure which can be observed today in the developing world is essentially the same as the pattern that existed three and four decades ago, when mortality began its precipitous decline.

IV. Framework for Empirical Analysis

1. Direct effects of patriarchal structure. The direct causal relationships linking patriarchal structure, women's status and fertility are summarized in Figure 2. Elements of patriarchal control combine to produce a particular degree of female economic dependence on men. The economic dependence of women, then, affects security target setting in two ways. First, and most important, for a given level of risk (and availability of alternative sources of insurance) the dependence of women determines the relevance of sex of children in figuring security needs. The more dependent women are, the greater the need for sons rather than children of either sex. Secondly, economic dependence may increase the demand for children as

Figure 2. Patriarchal Structure, Women's Status, and Fertility


Patriarchal Structure
(1) Kinship and family formation systems
(2) Religion/Belief systems
(3) Legal, administrative and political institutions
(4) Sexual division of labor and market structure
Woman's Status (Economic Dependence)
(1) Control of property
(2) Security of property rights
(3) Labor market opportunities
(4) Other earnings opportunities
(5) Control of labor and earnings
Security Target
(1) son preference
(2) patriarchal risk
Fertility
(1) mortality
(2) free riders
(3) other complications
(1) Other sources of risk
(2) Other sources of insurance

security assets over and above what it would otherwise be, because it introduces an additional source of risk. The security target -- expressed in terms of desired number of surviving sons or children -- in turn, has implications for the level of fertility. The level of fertility consistent with a particular security target depends on levels of mortality and natural fertility. Other things equal, the greater the chances of child survival, the lower the fertility necessary for achieving security goals. However, as noted in section II, if the security target is high, the situation may be one of excess demand, such that improvements in mortality simply facilitate the achievement of security goals which before were out of reach.[25]

As suggested in the case of Jamaica, where there are weak conjugal ties and the nuclear family unit lacks cohesiveness, complications may arise. In this situation, the free rider problem may serve to "short-circuit" the connection drawn between the security target and fertility in Figure 2. In international perspective, and judging from the incidence of "non-legal" unions shown in Table 2, the free rider problem appears to be a factor in many Latin American societies, or for a considerable proportion of their populations. As indicated by the substantial fertility declines registered in a number of these countries, however, the free rider problem is not the same order of constraint as is represented by the combined effects of extreme economic dependence.[26]

Among the "other complications" referred to in Figure 2 are infertility, child fostering, and the probability of child default. The implications of child default for fertility were discussed in the context of the Lexicographic Safety First Model in Section II. Little more can be added here except to raise the question of whether systematic differences in the

BEST COPY AVAILABLE

Table 2 Percentage of women's reproductive years expected to be spent in various marital states,[a] by country

Country	Total[b]	Single	Married					Divorced or separated	Widowed
			Total (Expectation of married life)	First union	Later union	Legal union	Non-legal union		
Africa									
Kenya	100	14	77	71	7	...	...	4	4
Lesotho	100	15	72	70	2	...	...	4	8
Asia									
Bangladesh	100	5	82	72	10	...	...	3	11
Fiji	100	20	74	64	10	...	...	3	3
Indonesia	100	16	72	48	24	...	...	6	6
Jordan	100	20	75	72	3	...	...	1	4
Republic of Korea	100	24	69	66	3	...	...	2	5
Malaysia	100	24	69	60	9	...	...	3	4
Nepal	100	8	84	...	...	...	...	1	7
Pakistan	100	14	80	75	4	...	...	2	4
Philippines	100	30	66	63	3	...	...	1	2
Sri Lanka	100	30	63	60	3	...	...	2	5
Thailand	100	24	69	61	8	...	...	4	3
Latin America									
Colombia	100	28	61	53	8	46	15	8	3
Costa Rica	100	29	62	57[c]	5[c]	51	11	7	2
Dominican Republic	100	17	66	45	21	28	38	15	2
Guyana	100	17	73	52	21	54	19	—10—	
Jamaica	100	13	71	34	37	32	39	—15—	
Mexico	100	22	69	64	6	60	9	6	3
Panama	100	21	67	50[c]	16[c]	31	33	11	1
Peru	100	26	66	58	7	52	14	6	2

[a] Synthetic cohort estimates, based on age-specific marital status distributions at the time of the survey.

[b] Percentages for categories may not add to 100 because of rounding.

[c] Assumes that married women in age group 15 to 19 are all in first marriage.

Source: United Nations, Marital Status and Fertility: A Comparative Analysis of World Fertility Survey Data for 21 Countries. New York, Department of International, Economic and Social Affairs. ST/ESA/SER. 52, 1983.

probability of child default can be observed across developing societies (or within particular societies), and how such probabilities have shifted in the course of post-war modernization and social change in particular cultural contexts. Unfortunately there are few data to bring to bear in answer.

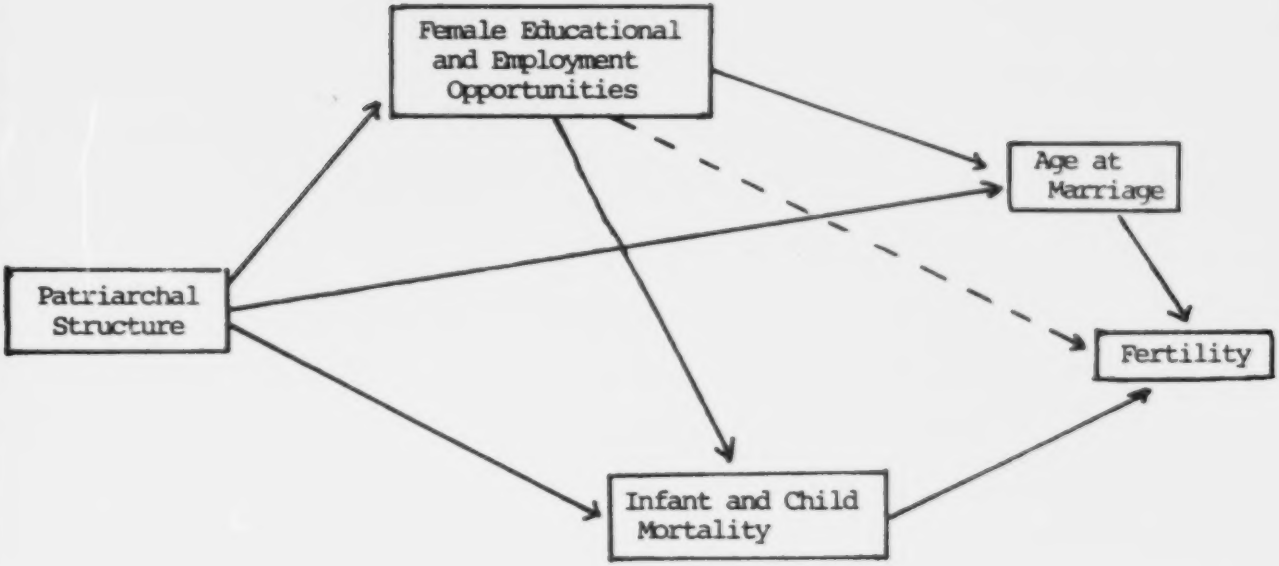
Both extraordinary levels of infertility and the institution of child fostering are characteristic of sub-Saharan Africa. High levels of infertility introduce additional uncertainty concerning the achievement of reproductive goals to an environment where uncertainty surrounding child survival is, in general, already great. The tenuous control over reproduction implied by the combination of a high incidence of infertility and high levels of mortality is antithetical to the notion of deliberate fertility limitation.[27] While the incidence of infertility is by no means uniform throughout sub-Saharan Africa, it is high on average, and, at the upper end of the range, produces rates of childlessness among older women in excess of 30 percent.[28] Child fostering, as practiced in much of sub-Saharan Africa, provides a means of diffusing and redistributing the costs of reproduction and also of acquiring child services when reproduction fails.[29] The significance of this institution in relation to reproductive behavior, however, lies less with narrow cost and benefit considerations than as a reflection of a social organization in which the conjugal bond is weak, the primary coporate group is the lineage rather than the conjugal unit, and where costs and benefits of reproduction must be evaluated from the perspective of this larger corporate group rather than that of parents.

2. Indirect effects of patriarchal structure. Patriarchal structure has important indirect implications for fertility because it conditions the

potential for change in women's educational attainment and work patterns, and the flexibility of age at marriage in response to educational and work opportunities. Patriarchal structure has further implications for fertility through its effects on infant and child mortality. The potentially powerful effects of education on both fertility and child mortality have been persuasively argued by Caldwell and others.[30] The point that I wish to emphasize is that patriarchal structure constrains the scope for rapid improvement in female educational attainment. In societies characterized by a highly restrictive and oppressive structure, such as that described for Bangladesh, the scope for improvement is limited. Where patriarchal structure is weak, and the control of women is less at issue, the scope for improvement is much greater. Similarly, where patriarchal structure is weak, there is greater inherent flexibility in female age at marriage and potential for transformation of women's labor force participation and patterns of work.

The indirect links between patriarchal structure and fertility are depicted in Figure 3. The principal indirect effect operates through female age at marriage, which is viewed as responding to both educational and employment opportunities, given a permissive patriarchal structure.[31] In a similar way, and under similar conditions, infant and child mortality may respond to improvements in female education, and, in turn, induce a response in fertility. Patriarchal structure thus operates as a covariate: the structure itself is assumed to remain relatively unchanged, but different structures either enable or inhibit other types of change. According to this interpretation, evidence of marked improvements in female secondary school enrollment, for example, is less an indication of transformation in patriarchal structure, than a reflection of the existence of a "favorable"

Figure 3: Indirect Effects of Patriarchal Structure on Fertility



structure.[32]

The arrow connecting educational and employment opportunities with fertility in Figure 3 is broken in order to indicate ambiguity of effect and subservience to the causal mechanism described in Figure 2. There is reason to think that female employment and education may initially have a positive impact on fertility, by curtailing breastfeeding and thus the period of post-partum amenorrhea.[33] On the other hand female employment and education may introduce a conflict between child rearing and other activities, including work, and by increasing the opportunity costs of children, exert a negative influence on fertility. Education arguably has a number of other effects that combine to produce a negative influence on fertility. Notably, the acquisition of education may serve to reduce the psychic and real "costs of fertility regulation."[34] However, as argued in Section II, security considerations are expected to take precedence, and the potential negative effects of female employment and education should be evaluated in this context. Thus, reduction in the costs of fertility regulation may well facilitate the achievement of fertility levels that are consistent with security targets, but it will not override the determinant influence of these targets. Similarly, an increase in opportunity costs will make children a more expensive form of insurance, but in the absence of change that affects the need for insurance or the availability of alternative forms of insurance, is unlikely to induce a fertility response.

These remarks are intended to apply in broad international perspective, over what is a rather short period of time (the last few decades). The image of monolithic and immutable structures is admittedly a crude abstraction. However, the distortion of reality that it entails is much less grievous, in

my view, than the implicit denial that structure exists at all.

3. Empirical application: Age difference between spouses. One encounters formidable difficulties in trying to operationalize the concepts of patriarchal structure and women's economic status and move toward empirical tests of the relationships suggested in Figures 2 and 3. For example, regarding the specific dimensions of women's economic dependence identified in Figure 2, one is hard pressed to find any adequate indicators in international statistical compendia. Of these dimensions, labor force data are the most readily available; however, they are virtually uninterpretable.[35] Specifying the boundaries of particular patriarchal structures, and thus the appropriate level of analysis, is also problematic. The example of Bangladesh is misleading because that country displays extraordinary homogeneity in culture and social structure within its boundaries. Even there, however, one finds a substantial Hindu minority, various tribal groups, and elements of a Westernized urban elite who deserve separate treatment. More typically, developing countries exhibit much greater internal heterogeneity than is the case for Bangladesh, that may result in quite different patriarchal structures for different regions, distinctive ethnic or religious communities, or, indeed, classes. Dyson and Moore's analysis shows this clearly for the case of India. Moreover, as a further complication, conditions of risk and insurance more generally may vary importantly between regions and population subgroups, and also may not be contiguous with the boundaries of patriarchal structure. It is, therefore, with some trepidation that I introduce a cross-cultural analysis of patriarchal structure and fertility, with countries as the unit of

analysis, and age differences between spouses as an indicator of patriarchal structure.

Aside from the problems just mentioned in identifying suitable empirical indicators of the dimensions of women's economic status, there are good reasons to look first at patriarchal structure, rather than women's status, as the critical variable in cross-national fertility comparisons. First, women's status is a function of patriarchal structure: as depicted in figure 2 it is an intermediate link in a causal chain connecting patriarchal structure and fertility. Second, patriarchal structure is a more stable set of social institutions than might be inferred from certain plausible, but partial, indicators of women's status (labor market participation, for example). Given the variability in such indicators that certain structures allow, it is more appropriate to infer women's status from patriarchal structure than structure from status. Thirdly, because patriarchal structure is relatively stable through time, it should yield more reliable measures than the dimensions of women's status.

The question remains, however, whether it is possible to measure patriarchal structure in a parsimonious way. The example of Bangladesh is not encouraging. It seems certain that any single indicator would fail to capture all the elements of patriarchal structure and their variation across societies. Nevertheless, as a first approximation the age difference between spouses (or partners in unions) has several attractive features as an indicator of patriarchal structure.

In general, a large difference in age of spouses (male greater than female) is associated with patrilineal kinship structure and patrilocal residence, while a small difference is consistent with bilateral kinship and

greater flexibility in the residence pattern of newly married couples. A large age difference itself connotes a potentially powerful means of male control over women, and is further indicative of the kind of control that derives from the interaction of sex and age hierarchies, as described for the case of Bangladesh. Moreover, the larger the age difference between spouses, the greater the probability of widowhood that women face. Widowhood is a critical juncture in a woman's life, and, in societies where women's economic independence is curtailed, is the focal point of patriarchal risk.

A recent compilation and analysis of data on age difference between union partners from World Fertility Survey sources offers further insight into the properties of this indicator.[36] Table 3 reproduces the median age difference between partners (male minus female ages) by duration since union for 21 countries grouped by continent.[37] From the first column (duration less than ten years), note that median age difference ranges from a low of 2.5 years in the Philippines to a high of 9.1 in Bangladesh. The next three columns show the median age difference for successively smaller durations since first union, and thus give an indication of the degree of change in age difference in the 15 years preceding the date of the survey (in most cases about 1975). While some change is indicated, usually toward a narrowing of the age differences, what is most striking to me is the overall stability of median age differences through time. For the most part, countries maintain their rank order in columns 2 through 4 of Table 3, and inter-country variance in median age difference dominates intertemporal variance.

Median age difference between spouses also displays remarkable invariance across socioeconomic groups within countries.[38] For example, contrary to what one might expect, median age difference within the great

Table 3: Median Age Difference Between Partners, by Duration Since Union (Years): Once in Union Women

COUNTRY	MEDIAN AGE DIFFERENCE DURATION SINCE UNION (YEARS)			
	≥ 10	10-14	5-9	0-4
AFRICA				
Ghana	7.6	9.5	8.2	7.2
Kenya*	7.1	8.0	6.9	7.3
Lesotho*	5.6	6.5	5.7	5.5
Sudan*	8.4	9.4	8.6	8.2
ASIA				
Syria*	6.1	6.8	6.2	6.0
Bangladesh*	9.1	10.1	9.3	9.0
Nepal*	3.8	4.6	4.1	3.6
Pakistan*	6.5	5.9	6.4	6.6
Sri Lanka*	4.8	6.1	5.3	4.3
Indonesia	4.9	5.3	5.2	4.7
Korea, S	4.0	3.7	4.0	3.9
Malaysia: Malay	4.8	5.1	5.0	4.6
Chinese	3.9	3.6	3.9	3.9
Philippines*	2.5	2.7	2.5	2.5
Thailand*	3.3	3.5	3.4	3.2
AMERICAS				
Colombia	4.6	5.1	5.6	4.6
Paraguay	4.0	4.4	4.1	4.0
Peru	3.8	4.3	3.9	3.8
Costa Rica	3.0	3.7	3.6	2.4
Mexico*	3.0	3.5	3.2	2.9
Haiti	4.1	4.9	4.0	4.2
Jamaica *	4.1	3.3	3.8	4.9

*Data pertain to women currently in union only
Source: Casterline and McDonald, cited in note 36, Tables 4 and 5

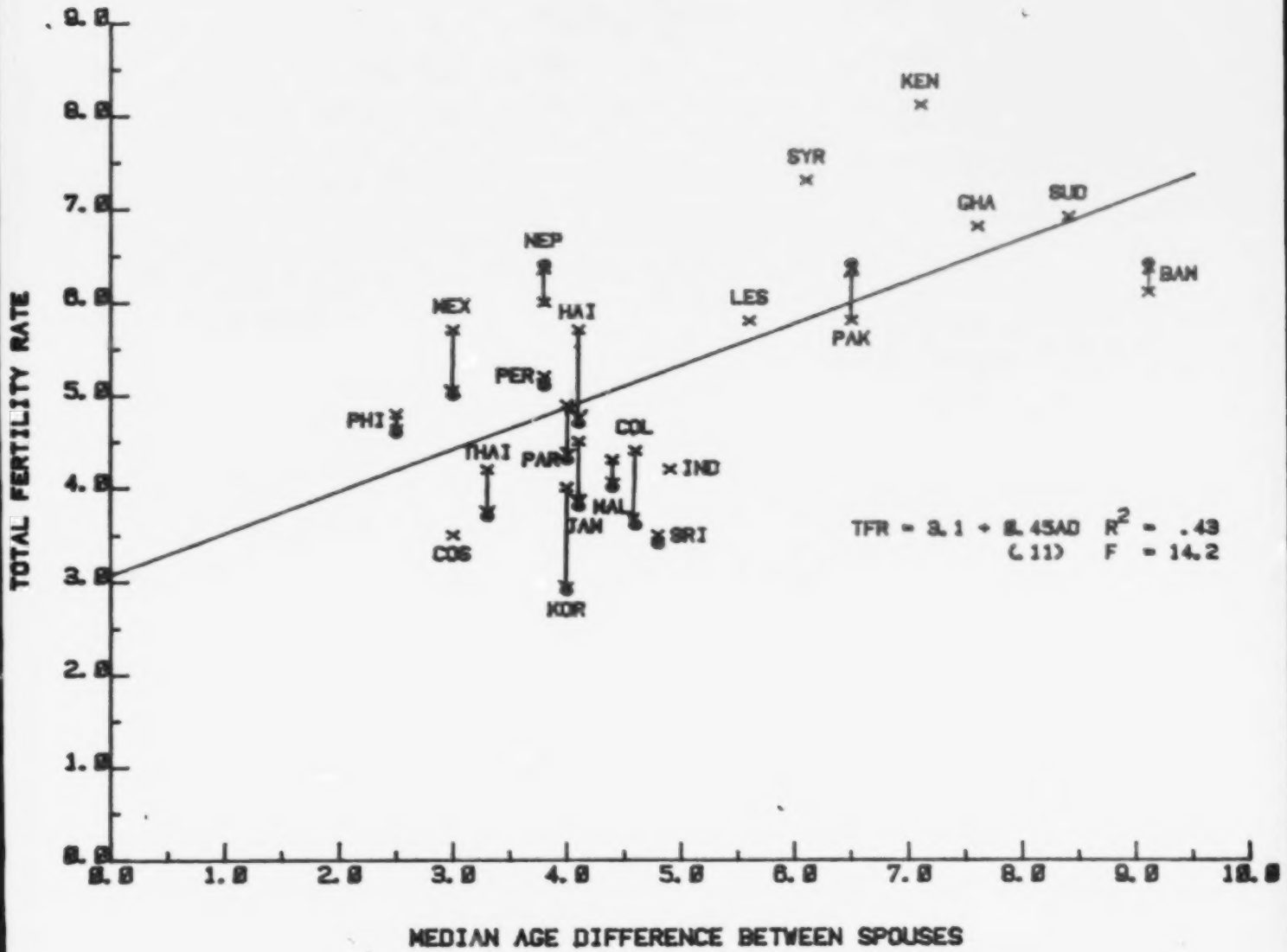
majority of countries of Table 3 does not vary systematically with wife's years of schooling. Nor does it vary according to husband's occupation, or wife's childhood place of residence (city, town, or village). With respect to its merits as an indicator of patriarchal structure, this evidence of robustness is reassuring.

Figure 4 plots the Total Fertility Rate (TFR) against median age difference between spouses for the 21 countries listed in Table 3. Two TFRs are used. The first, designated by (X), is that yielded by the World Fertility Survey (this will be referred to as TFR(1)), and the second, designated by (0), is the most recent reliable estimate available (TFR(2)).[39] In the case of Nepal, Pakistan, and Bangladesh, the more recent estimate of TFR is greater than the WFS estimate. This reflects the likelihood that the WFS underestimated current fertility in those countries, rather than a real increase in fertility between the date of the survey and the present. In none of these three countries is there reason for supposing that there has been any recent change in national fertility rates. The more recent TFR estimates shown elsewhere in Figure 4 should be interpreted as indicating real declines in fertility.

Visual inspection of Figure 4 suggests a positive relationship between median age difference and fertility. Indeed, the simple correlation between the two variables (using TFR(1)) is .65 — higher than the correlation between fertility and infant mortality (.50), the logarithm of GNP per capita (-.35), median age at first marriage for women (-.58), or female secondary school enrollment ratios (-.59). The regression line drawn in Figure 4 has a slope of .45. The regression line for TFR (2), reflecting recent declines in fertility, has a slightly steeper slope (.57) and a better fit (R^2 = .49; F =

BEST COPY AVAILABLE

FIGURE 4: RELATIONSHIP BETWEEN TOTAL FERTILITY RATE AND AGE DIFFERENCE BETWEEN SPOUSES



18.5). The estimated effect of median age difference on fertility is not substantially diminished when statistical controls for infant mortality, GNP per capita, age at marriage, or female secondary school school enrollment are introduced.

It is also clear from Figure 4, however, that the strong positive correlation between median age difference and fertility derives from the position of two clusters of countries in the plot: the cluster in the lower left, comprised primarily of Southeast Asian and Latin American countries, with both relatively low age differences and low fertility; and the cluster in the upper right, comprised of African, South Asian (Muslim) and West Asian countries, with large age differences and high fertility. (If median age difference is collapsed, distinguishing only two categories -- below five years and five years and greater -- the correlation between this dichotomous variable and TFR increases to .78). If one looks within each cluster, however, no clear relationship between median age difference and fertility can be discerned. Therefore, our indicator of patriarchal structure appears to be able to distinguish at best two distinct regimes, one "weak" and one "strong".[40] Within the weak cluster, one can observe that many countries have experienced further recent fertility declines. The change involved in moving from TFR(1) to TFR(2) (excluding the outliers Nepal and Korea) has had the effect of compressing the range of fertility within this group considerably. No such movement in fertility is evident in the strong cluster.

One measure of the effect of patriarchal structure on fertility can be obtained by regressing TFR on median age difference between spouses, controlling for possible confounding variables. The first four columns of

Table 4 presents the results of these regressions. To facilitate interpretation, median age difference is transformed into a dichotomous variable, set equal to zero if median age difference is less than five years and equal to one if median age difference is five years or more. These regression models incorporate successively as controls: infant mortality rate, logarithm of GNP per capita, median age at first marriage (females) and female secondary school enrollment ratios. The coefficients for median age difference (the first row in Table 4) imply that a strong patriarchal regime is responsible for adding something in excess of two live births to the Total Fertility Rate. (Table 4 uses the more recent TFR(2) as the dependent variable; the results using TFR(1) are equally consistent, although the estimated coefficients for age difference average about 1.9 instead of 2.2).

The effects of patriarchal structure on fertility can be examined further by testing for statistical interaction between median age difference and the "control" variables (infant mortality, etc.). Recall that patriarchal structure was posited to act as a covariate. Where patriarchal structure is strong, it was argued, mortality decline would simply facilitate the achievement of security targets that were out of reach before, and, therefore, one would not necessarily expect fertility to decline in response. For weak patriarchal regimes, however, where intrinsic security targets were already low, one would expect fertility to decline (presumably with some lag) in response to a decline in mortality. Similarly, weak patriarchal regimes possess greater inherent flexibility in female age at marriage, education and employment. These should prove more responsive to change in the course of economic development, and, through the channels described in the previous section, could potentially have an impact on fertility.

Table 4: Regression Analysis of Total Fertility Rate

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Age Difference (0/1)	2.2 (.4)*	2.4 (.4)	2.1 (.5)	2.2 (.4)	6.1 (1.0)	-2.5 (3.4)	-8.4 (4.0)	1.7 (.75)	2.6 (.4)
IMR	.01 (.006)				.02 (.005)				
Log GNP Per Capita		-.28 (.24)				-.49 (.28)			
Med. Age at Marriage			-.22 (.12)				-.44 (.13)		
Female Secondary School Enrollment				-.02 (.01)				-.03 (.01)	
AD * IMR					-.04 (.01)				
AD * LOGGNP						.79 (.54)			
AD * MAAM							.58 (.22)		
AD * FENROL								.03 (.03)	
Constant	3.5	6.1	8.6	5.0	2.6	7.5	12.8	5.1	4.2
R^2	.74	.72	.74	.75	.87	.74	.82	.76	.70
F	25.6	22.8	26.1	27.2	38.6	16.8	25.4	18.1	43.6

*Numbers in parentheses are standard errors

In order to test for the presence of interaction, a variable consisting of the product of the dichotomous age difference variable and the appropriate control variable was added to the simple models of columns (1) through (4) of Table 4. The results are shown in columns (5) through (8) of that table, and plotted in Figure 5. Because the age difference variable is dichotomous, the results are easily interpreted. For example, in the case of infant mortality (column 5), when the age difference variable is zero, the estimated relationship between infant mortality and fertility can be written:

$$TFR = 2.6 + .02\ IMR$$

When age difference is equal to 1, however, the relationship is:

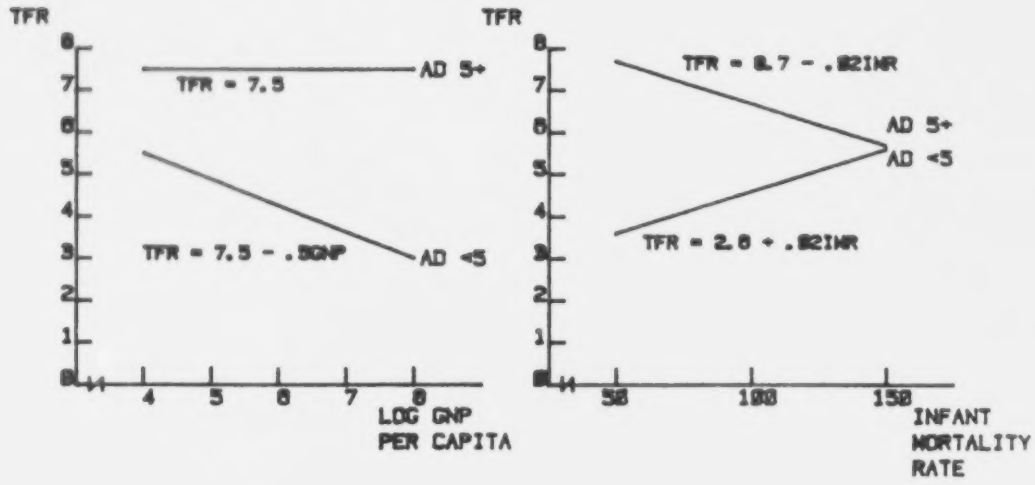
$$TFR = (2.6 + 6.1) + (.02 - .04)\ IMR, \text{ or}$$

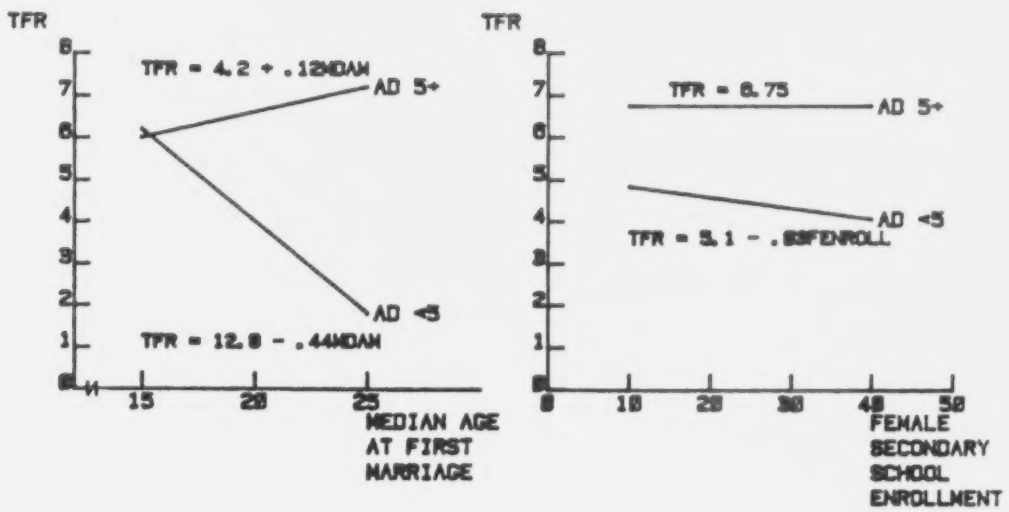
$$TFR = 8.7 - .02\ IMR$$

The results are quite striking. Among strong patriarchal regimes (AD = 5+), variation in GNP per capita, infant mortality, median age at first marriage, and female secondary school enrollment bears either no relation to fertility levels or a relationship that is contrary to what one would ordinarily expect.[41] Among weak patriarchal regimes (AD < 5), on the other hand, the four predictor variables behave very much as expected: fertility is positively related to the infant mortality rate, and negatively related to GNP, age at marriage, and school enrollment. The size and statistical significance of the estimated effect of these variables is in each case enhanced by introducing an interaction term.[42]

4. Preference for sons. Societies in which women have little economic independence should generate a strong preference for sons. According to our interpretation, the material basis for son preference in such societies is the need for security -- first and foremost, security in old age. Quite

FIGURE 5. INTERACTION EFFECTS OF AGE DIFFERENCE BETWEEN SPOUSES (AD) WITH GNP PER CAPITA, INFANT MORTALITY, AGE AT FIRST MARRIAGE, AND FEMALE SECONDARY SCHOOL ENROLLMENT





apart from any other potential channel of influence, women's status should have fundamental implications for fertility because it determines the extent to which the sex of children is relevent to planning for future security needs.

The World Fertility Survey has recently issued a report in their comparative studies series that analyzes preferences for the sex of children for 27 countries.[43] The analysis focuses on responses to the question "Would you prefer your next (first) child to be a boy or a girl?"; which was asked of all pregnant women and all currently married non-pregnant women who wanted at least one more child and considered themselves capable of having another child. As a summary indicator of preferences the countries were ranked according to the ratio of "boy" responses to "girl" responses, after apportioning the occasionally large group of undecided women equally between the numerator (boys) and the denominator (girls).[44] Four groups of countries were identified on this basis, ranging from "strong son preference" to "daughter preference":

Strong son preference (1)		Moderate son preference (2)		Equal preference (3)		Daughter preference (4)	
Pakistan	4.9	Lesotho	1.5	Kenya	1.1	Venezuela	0.8
Nepal	4.0	Sri Lanka	1.5	Indonesia	1.1	Jamaica	0.7
Bangladesh	3.3	Sudan	1.5	Peru	1.1		
Korea	3.3	Thailand	1.4	Guyana	1.1		
Syria	2.3	Fiji	1.3	Trinidad and Tobago	1.1		
Jordan	1.9	Malaysia	1.2	Columbia	1.0		
		Dominican Republic	1.2	Paraguay	1.0		
		Mexico	1.2	Costa Rica	1.0		
				Panama	1.0		
				Philippines	0.9		
				Haiti	0.9		

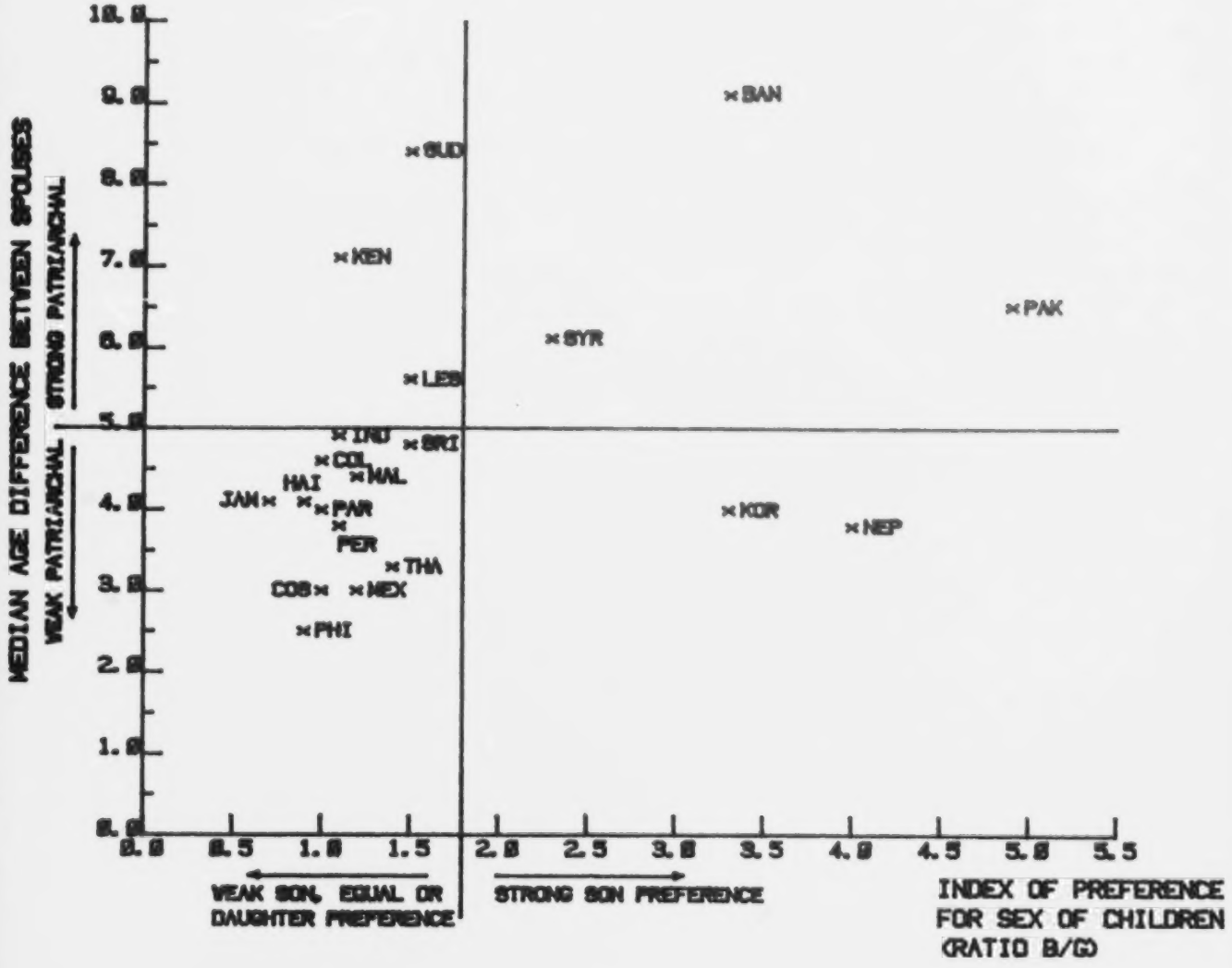
Source: Cleland, Verrall, and Vaessen, cited in note 43, p.10

Middle-eastern and South Asian countries dominate the strong son preference group; Southeast Asian and sub-Saharan African countries are distributed between the moderate son preference and equal preference group; while Latin American and Caribbean countries generally display equal preference. A more detailed analysis of preferences by parity (limited to parities two through four) and existing sex composition of children suggests that within the strong son group, a net preference for girls occurs only among women who have no daughters. In the three other groups, preferences reveal a desire for a balanced sex composition. The desire to correct an imbalance is evident both in groups (2) and (3); however, when a balance already exists, the moderate son group expresses a net preference for sons, while the equal preference group exhibits no marked preference for either sex.

In Figure 6, the sex preference ratios are plotted against median age difference between spouses for the sample of countries for which both types of data are available. With several notable (and interpretable) exceptions one can distinguish a rough correspondence between our measure of patriarchal structure and degree of son preference. Latin American, Caribbean, and Southeast Asian countries are clustered in the quadrant to the lower left, with equal, or weak son, preference and a relatively small age difference between spouses, and Muslim South Asian and Middle eastern countries are located in the upper right-hand quadrant. (The tattered appearance of this plot is due in no small part to the meager sample of countries from the

BEST COPY AVAILABLE

FIGURE 6: RELATIONSHIP BETWEEN MEDIAN AGE DIFFERENCE BETWEEN SPOUSES AND PREFERENCE FOR THE SEX OF CHILDREN (RATIO B/G)



latter region. Although median age difference data is not readily available for Jordan or Egypt, judging from the difference in mean age at marriage for these countries and data that is available on son preference, they would form a tight cluster with Syria in Figure 6.)[45] The misfits in the figure are Korea and Nepal (low age difference between spouses, strong son preference) and the African countries (large age differences between spouses, weak son preference or indifference).

The position of the African countries is not unexpected given the particular interpretation of a large age difference between spouses that is appropriate in that setting (see Note 40). The continuing importance of corporate kin groups and the institutions of brideprice and polygyny suggest that large age differences between spouses are more a reflection of lineage (and generational) control than the economic subordination of women by men. Weak son preference, or a preference for balanced sex composition, is consistent with this interpretation.

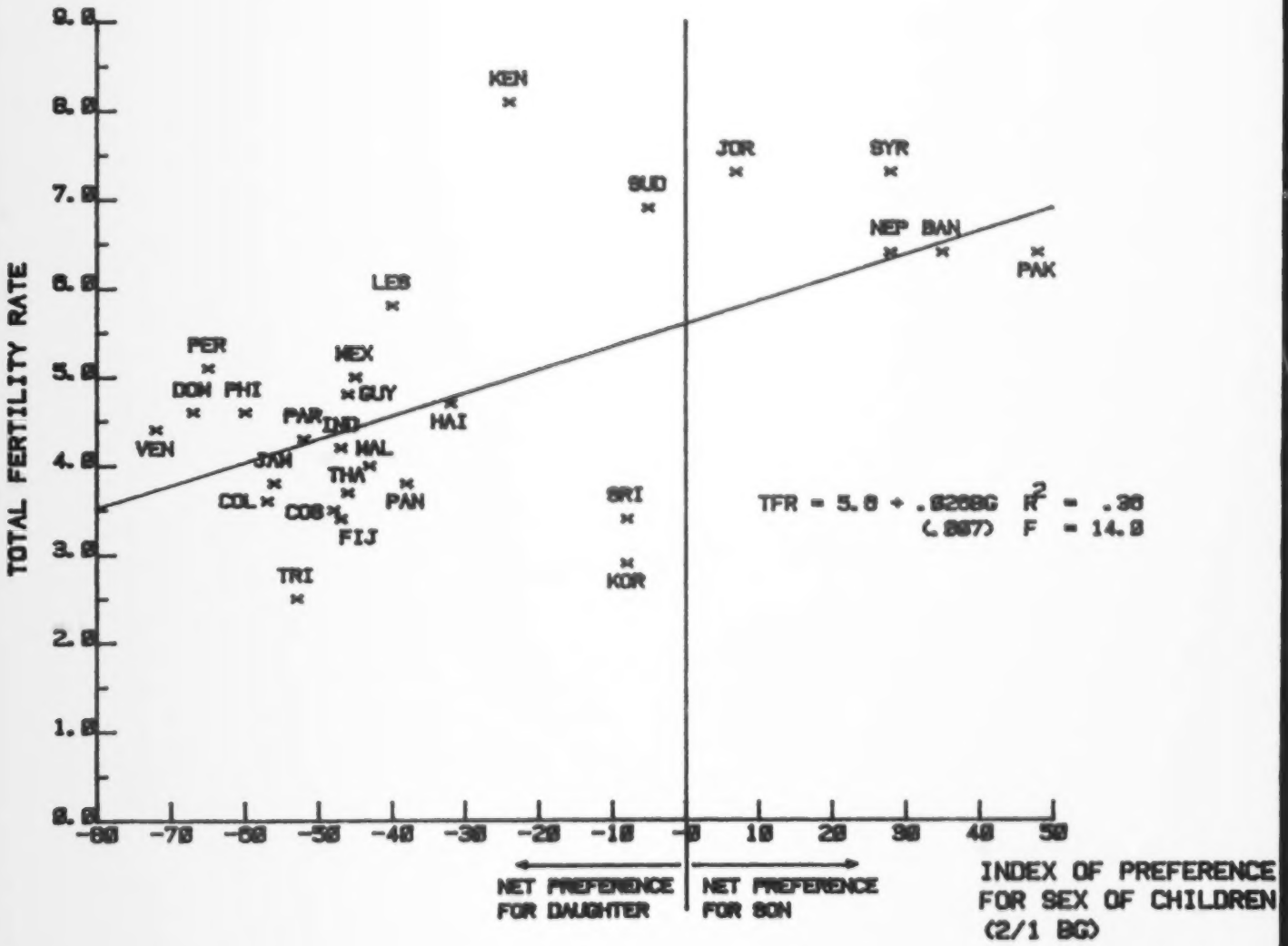
In Korea, it is likely that the material basis for son preference has been substantially eroded through the process of rapid economic development and the consequent amelioration of risks, development of financial and insurance markets, and growth of social security and employee benefits.[46] This is not to say that the link between material security (particularly in old age) and reproduction has been completely eliminated. The very strong son preference that persists in Korea is, however, placed in a better perspective by noting that of women (currently married, fecund, and non-pregnant) with one son and one daughter, 72 percent indicated that they did not want any more children, and of women with two sons and one daughter, 97 percent said they wanted no more children.[47]

Although Nepal has a very heterogeneous population, two major cultural groups can be identified: Hindu Indo-Arayan and Tibeto-Burman (primarily Buddhist).[48] In kinship and women's economic status, the former, which is the numerically dominant cultural group (approximately 80 percent of the total population), is akin to the "north Indian" pattern.[49] I have no ready explanation as to why the median age difference between spouses is low in Nepal; however, given women's relatively low economic status in the majority group, it would seem that, in the aggregate, the country belongs with other "strong" patriarchal societies, as is suggested by the marked preference for sons.

In Figure 7, the total fertility rate is plotted against another measure of child sex preference. The horizontal axis of Figure 7 is the difference between the percentage of women who want a son and the percentage of women who want a daughter among currently married fecund women who already have two living sons and one daughter and who want more children.[50] For countries in the negative range there is a net preference for daughters, and for those in the positive range, a net preference for sons. Because these women already have two living sons and because the current sex composition of their children is unbalanced, this index represents a "strong" test of son preference. The sample of countries in Figure 7 includes all those for which data on preference for the sex of children are available. With the exception of Korea, countries with a marked preference for sons also have high and relatively unyielding fertility. Similarly, countries that tend toward a preference for balanced child sex composition (with the exception of sub-Saharan Africa) have all experienced some degree of fertility decline.

BEST COPY AVAILABLE

FIGURE 7: RELATIONSHIP BETWEEN TOTAL FERTILITY RATE AND PREFERENCE FOR SEX OF CHILDREN (2/1 BG)



As in the case of median age difference between spouses, the sex preference index of Figure 7 is capable of distinguishing two distinct regimes: the cluster to the lower left, in which a strong preference for a balanced sex composition is evident, and the cluster to the upper right where a net preference for sons persists. Kenya, Lesotho, and Sudan form a loose grouping of their own, although Lesotho is more closely aligned with the "balanced" cluster, while Sudan is shaded toward the strong son preference group. Sri Lanka and Korea are off by themselves, with each sharing a slight net preference for daughters. (It should be noted for these two countries that the number of observations on which the percentages are based is small, particularly in the case of Korea.)

The regression line drawn in Figure 7 is based on the entire sample of countries. If Korea and the sub-Saharan countries of Kenya and Lesotho are excluded, the estimated slope is unchanged (.028) but one achieves a much better fit (R^2= .54, F= 24.9). Introducing a statistical control for infant mortality rate does not substantially alter this result.[51]

V. Conclusion

Given the caveats offered concerning this mode of analysis, and the empirically uncertain status of some components of the argument, it would be unwise to claim too much on the basis of these results. Nevertheless, they clearly do provide support for the proposition that patriarchal structure and women's economic dependence are important mediators of fertility transition in the developing world. I will conclude by commenting on several implications of this proposition for research and policy.

The scope for cross-national quantitative analysis of fertility is sharply constrained by the meager data that are available. The important conceptual distinction between women's economic status, on the one hand, and its structural determinants, on the other, and the need for independent indicators of both, greatly increases the demands on data. As argued in the previous section, patriarchal structure operates as a covariate: it interacts with social and economic development in such a way as to both limit the variability of components of women's economic status and affect the relationship between such components (and other development variables) and fertility. Indicators of women's economic status (labor force participation rates or school enrollment ratios, for example) even if they are meaningfully measured, cannot, therefore, be used as indicators of underlying patriarchal structure. Judging from the results in Table 4, omission of this variable in cross-national analyses of fertility would seriously bias the results. The functional form of statistical models is an equally important potential source of specification error and bias. A recent review of 33 cross-national studies of fertility in developing countries conducted between 1962 and 1981 revealed that all used additive statistical models.[52] What is called for instead (assuming that one has a measure of patriarchal structure) is an interaction model. The likelihood of errors in model specification (both omitted variables and functional form) lead me to question the results of these studies, while problems of data availability make me pessimistic about the prospect of pushing the analysis much beyond that which is presented in this paper. The complications introduced by distinctive family structures in different regions serve to further dim these prospects.

What is needed more immediately, in my view, is research that can

elaborate the elements of patriarchal structure in different settings, focusing on the circumstances of women's economic vulnerability, and the role and importance of sons and daughters as sources of security. I would give high priority to field-based work such as that of Oppong and Bleek among the Kwahu which can comment simultaneously on the economic relations between parents and children and between men and women, on family and kinship dynamics, and the locus and criteria of reproductive decisions.

With respect to policy, the analysis in this paper suggests that the task of fertility reduction in societies with strong patriarchal regimes is enormously more difficult than in those with weak regimes. Consider the case of educational expansion and the promotion of literacy, a favorite anti-natal policy prescription. In the weak patriarchal regime, beginning with a low level of literacy, the government can set about expanding the educational sector and creating educational opportunities (preferably in conjunction with increasing demand for an educated work force) with a reasonable expectation that such a policy will induce a fertility response, as age at marriage rises and various other channels of influence are activated. In the strong patriarchal regime, beginning with the same level of literacy and policy course, the government can expect (a) resistance to female school enrollment, because it conflicts with the logic and inertia of patriarchal structure, and (b) to the extent that female education is promoted, a weaker fertility response.

Recognition that the problem lies at the structural level, while a necessary step toward informed policy, does not make the problem less formidable or more amenable to policy intervention. Among societies with strong patriarchal regimes there are, as yet, no demographic success stories

from which policy lessons might be drawn; nor are there many examples among these societies of concerted policy attacks on the institutional bases of women's economic dependence. One country in which there has been such an effort is Tunisia, where President Bourguiba has long championed the cause of women, and, in the interests of improving their status, instituted a broad range of legal reforms, and vigorously promoted female education and female political participation. While these efforts have unquestionably had some effect, particularly as evidenced by a rise in female age at marriage and substantial increase in female primary school enrollment, the total fertility rate in Tunisia remains above five. As described by Larson, an anthropologist who worked in a rural area of Tunisia and monitored the impact of these policies, the institutional framework of patriarchy has proven quite resilient.[53] The villagers in this locality were selective in their acceptance of the various laws and policies: adopting those which did not seriously threaten the social order and rejecting those that did. For example, delaying marriage until age 19 or 20 was agreeable because it would permit a girl "time to develop her housekeeping and wifely skills"[54] and, similarly, primary education for girls was seen as "a good opportunity for a woman to acquire the basic skills she will need to be a good wife and mother".[55] However, the villagers, particularly men, resisted the idea of secondary education for females: "Older and middle aged men did not see the value of secondary education and feared sending their daughters to a school outside the village where they would have opportunities to flirt with men...Such education [young men argued] not only would compromise their wives' reputations but would raise their expectations in ways that would make them unsuited to village life. They would disdain hard work, make too many

material demands, and challenge village customs..."[56] Despite the policies of the state, women in this locality remain excluded from the economic mainstream and highly dependent on men.

Notes

1. Karen O. Mason, "The status of women, fertility and mortality: A review of interrelationships," (Paper prepared for the The Population Sciences Division, The Rockefeller Foundation, New York, July 1983). See also: Ruth Dixon, "The roles of rural women: Female seclusion, economic production and reproductive choice," in Population and Development, ed. R. Ridker (Baltimore: The Johns Hopkins University Press, 1976); Christine Oppong, "Women's roles, opportunity costs, and fertility," in Determinants of Fertility in Developing Countries, eds. R. Bulatao and R.D. Lee et al. (New York: Academic Press, 1983), pp. 439-473; Constantina Safilios- Rothschild, "Female Power, autonomy and demographic change in the Third World," in Women's Roles and Population Trends in the Third World, eds. R. Anker, M. Buvinic and N.H. Youssef (London: Croom Helm, 1982); and Helen Ware, Women, Demography and Development (Canberra: The Australian National University, 1981).

2. For an elaboration of this argument see: Mead Cain, "Fertility as an adjustment to risk," Population and Development Review 9, no.4 (December 1983), pp. 688-702.

3. For some supporting evidence see Mead Cain, "The household life cycle and economic mobility in rural Bangladesh," Population and Development Review 4, no. 3 (September 1978): 421-438; Mead Cain, "Risk and insurance: Perspectives on fertility and agrarian change in India and Bangladesh," Population and Development Review 7, no. 3 (September 1981): 435-474; and Mead Cain, "Perspectives on family and fertility in developing countries," Population Studies 36, no. 2 (July 1982): 159-175.

4. LSF and other approaches to modeling uncertain decisions are described in J. A. Roumasset, J. Boussard, and I. Singh (eds.), Risk, Uncertainty and Agricultural Development (New York: Agricultural Development Council, 1979). Lexicographic decision rules based on other criteria are discussed in Harvey Leibenstein, "Economic decision theory and human fertility behavior: A speculative essay," Population and Development Review 7, no. 3, (September 1981): 381-400.

5. If the frequency of default were high enough, parents might conceivably give up on children. However, if there were no alternative to children, the frequency would have to be very high before this would happen.

6. For a fuller discussion see Cain, 1981, cited in note 1.

7. Peter H. Lindert, "Child costs and economic development," in Population and Economic Change in Developing Countries, ed. Richard A. Easterlin (Chicago: University of Chicago Press, 1980), pp. 5-79.

8. For a review of this literature, see Guy Standing, "Women's work activity and fertility," Chapter 16 in Bulatao et al. Determinants of Fertility in Developing Countries, 2 vols. (New York: Academic Press, 1983), pp. 416-438.

9. United Nations, World Population Trends and Policies 1982 Monitoring Report, Volume 1: Population Trends (New York: United Nations, forthcoming). It is tempting to extend this list to other countries where data are less complete. For example, the most recent contraceptive prevalence survey in Thailand (1981) gives the first indications that the rapid fertility decline experienced by that country may be "bottoming out" at a TFR of about 3.5. (John Knodel, et al., Fertility in Thailand: Trends, Differentials, and Proximate Determinants, Committee on Population and Demography Report No. 13, Washington D.C.: National Academy Press (1982): 18-19.) However, as the authors note, it is only one survey, and one that is methodologically suspect at that.

10. See Odile Frank, "Infertility in sub-Saharan Africa: Estimates and implications," Population and Development Review 9, no. 1 (March 1983): 137-144.

11. From Cain, 1981, cited in note 3.

12. T. Dyson and M. Moore, "On kinship structure, female autonomy, and demographic behavior in India," Population and Development Review 9, no. 1 (March 1983): 35-60.

13. This point is discussed in Cain, 1982, cited in note 3.

14. John C. Caldwell, "A theory of fertility: From high plateau to destabilization," Population and Development Review, 4, no. 4 (December 1978): 553-577.

15. John Hajnal, "Two kinds of preindustrial household formation systems," Population and Development Review 8, no. 3 (September 1982), pp. 449-494.

16. George W. Roberts, "Family unions in the West Indies and some of their implications," in Nuptiality and Fertility, ed. Lado T. Ruzicka (Liege: Ordina Editions, 1982).

17. For example, see the selections in Christine Oppong (ed.), Female and Male in West Africa (London: Allen and Unwin, 1983) and Caldwell's analysis of the Yoruba: John C. Caldwell, "Toward a restatement of demographic transition theory," Population and Development Review 2, no. 3-4 (1976), pp. 321-366. An overview is provided in the chapter on sub-Saharan Africa in William J. Goode, World Revolution and Family Patterns (New York: The Free Press, 1963), pp. 164-202.

18. H. Leibenstein, "The economic theory of fertility: Survey, issues and considerations," in International Population Conference, Mexico, 1977, Volume II (Liege: IUSSP, 1977), pp. 49-64.

19. See Roberts, cited in note 16, and E. Clark, My Mother Who Fathered Me (London: Allen and Unwin, 1975).

20. This section is based on: Christine Oppong and Wolf Bleek, "Economic models and having children: Some evidence from Kwahu, Ghana," Africa 52, no. 4 (1982), pp. 15-32. The quotations below are from this article.

21. This analysis draws on M. Cain, S. R. Khanam, and S. Nahar, "Class, patriarchy, and women's work in Bangladesh," Population and Development Review 5, no. 3 (September 1979): 405-438.

22. A. A. Maududi, Birth Control: Its Social, Political, Economic, Moral and Religious Aspects (Lahore: Islamic Publications, 1968); and quoted in H. Papanek, "Purdah: Separate worlds and symbolic shelter," Comparative Studies in Society and History 15, no. 3 (1973), p. 308.

23. See Peter J. Bertocci, "Elusive villages: Social structure and community organization in rural East Pakistan," Ph.D. dissertation, Michigan State University, 1970; and T. Abdullah and S. Zeidenstein, Village Women of Bangladesh: Prospects for Change (Elmsford, N.Y.: Pergamon Press, 1981).

24. Papanek, cited in note 22, p. 289.

25. Once a security target has been determined for a particular society, Easterlin's framework should be useful in sorting out its implications for fertility and fertility transition. Easterlin's framework focuses on "desired family size" -- the number of surviving children a couple would want in a society in which the costs of fertility regulation were negligible. This framework is concerned less with the determinants of desired family size, than the implications for fertility once desires, the costs of fertility regulation, and potential family size have been determined. One important modification to this framework that is suggested by the safety-first model of fertility would be the specification of the sex composition of surviving children. See R.A. Easterlin, "An economic framework for fertility analysis," Studies in Family Planning 6, no. 3 (March 1975): 54-63. For recent empirical applications in India see E.M. Crimmins, R.A. Easterlin, S.J. Jejeebhoy, and K. Srinivasan, "New perspectives on the demographic transition: A theoretical and empirical analysis of an Indian state, 1951-1975," Economic Development and Cultural Change 32, no. 2 (January 1984): 227-253, and K. Srinivasan, S.J. Jejeebhoy, R.A. Easterlin, and E.M. Crimmins, "Factors affecting fertility control in India: A cross-sectional study," Population and Development Review (forthcoming 1984).

26. See Figure 4.

27. See Frank, cited in note 10.

28. Frank, cited in note 10.

29. O. Frank, "Child fostering in sub-Saharan Africa" (Paper presented at the Population Association of America Annual Meeting, Minneapolis, May 1984).

30. J.C. Caldwell, "Mass education as a determinant of the timing of fertility decline," Population and Development Review 6, no. 2 (June 1980): 225-255; J.C. Caldwell, "Education as a factor in mortality decline: An examination of Nigerian data," Population Studies 33, no. 3 (November 1979): 395-413; S.H. Cochrane, Fertility and Education: What do we really know? (Baltimore: Johns Hopkins University Press, 1979).

31. One may observe an increase in female age at marriage for reasons unrelated to these stimuli. Changes in age structure and an attendant marriage squeeze may place upward pressure on female age at first marriage. For example, see J.C. Caldwell, P.H. Reddy, and P. Caldwell, "The causes of marriage change in South India," Population Studies 37, no. 3 (November 1983): 343-361.

32. Cf. Dyson and Moore, cited in note 12.

33. M. Nag, "The impact of sociocultural factors on breastfeeding and sexual behavior," Chapter 6 in Bulatao et al. (eds.) Determinants of Fertility in Developing Countries, 2 vols. (New York: Academic Press, 1983), pp. 134-162.

34. This refers to the couple's attitudes toward fertility regulation and access to family planning services and supplies, including both the subjective disadvantages and economic costs. See Easterlin, cited in note 40.

35. See: R.B. Dixon, "Women in agriculture: Counting the labor force in developing countries," Population and Development Review 8, no. 3 (September 1982): 539-566; and Cain et al., cited in note 21.

36. J.B. Casterline and P.F. McDonald, "The age difference between union partners," World Fertility Survey, WFS/TECH. 2070, 28 March 1983 (also presented at the Population Association of America Annual Meeting, Pittsburgh, May 1983).

37. For a detailed description of the data see Casterline and McDonald, cited in note 36. The data for Sudan pertain to the northern part of that country only. Age difference data is missing for less than twelve percent of the women surveyed in every country except Indonesia, Haiti and Jamaica. The loss is most severe for Haiti and Jamaica, where the estimated median age difference pertains to less than half of the women first entering a union in the ten years preceeding the survey.

38. See Casterline and McDonald cited in note 36.

39. The sources of these and other data that will be used in the analysis are given in Appendix Table 1.

40. I would prefer to treat the sub-Saharan African countries (Ghana, Kenya, and Lesotho) separately in the following analysis. I include them only

because of the limited number of observations available. While these countries behave in a fashion that is consistent with the other members of the "strong" patriarchal cluster, they do so, I believe, in part for the wrong reasons. In sub-Saharan Africa, control of women (and men) by the larger kin group is, perhaps, more at issue than control of women by men. The large age differences between spouses in Ghana, Kenya, and Lesotho bear a distinct interpretation. The age difference may be large in part because of the persistent demands of brideprice. (Men must delay marriage until sufficient wealth is accumulated to meet these substantial demands.) The age difference also reflects the practice of polygyny. For example, in Kenya (the only country for which data are available from WFS sources) the median age difference according to union type and rank of wife is as follows:

	Median Difference	Number of Women
Monogamous	6.1	1727
First wife	7.4	91
Second wife	15.0	318
Third or higher	22.9	104

(from Casterline and McDonald, cited in note 36, Table 17)

With the exception of the Akan people of Ghana, these societies are, I should add, characterized by patrilineal kinship, patrilocal residence, and male (or patrilineal) control of property and female labor. Their presence in the "strong" cluster is, therefore, not totally anomalous. However, the system is not geared toward the control of female sexuality through restrictions that severely constrain women's economic activity (although women typically operate in separate "spheres") as is the case in Bangladesh and North India. Indeed, women in sub-Saharan Africa are very active economically, usually in ways that give them considerable independence from their husbands. Rather, as is suggested by the importance of brideprice, the object of control is women's labor per se (and their reproductive potential), and the major actors in the game are corporate kin groups. In this setting, the age difference between spouses is more a reflection of lineage control than of patriarchal control, as we have conceived it.

41. The range of the predictor variables is substantial in both groups:

	Age Difference <5		Age Difference 5+	
	High	Low	High	Low
GNP	2250	150	1570	140
IMR	142	42	139	65
MAAM	22.0	16.6	18.4	13.9
FENROL	62	4	32	7

42. The interaction is weakest for female secondary school enrollment.

43. John Cleland, Jane Verrall, and Martin Vaessen, "Preferences for the sex of children and their influence on reproductive behaviour", WFS Comparative Studies No. 27. (Voorburg, Netherlands: International Statistical Institute, November 1983).

44. The residual category actually lumps together expressions of indifference concerning the sex of the next child, with indecision and non-response. Among the countries considered in this analysis, the size of this category varied from a low of 14 percent for the Dominican Republic to a high of 54 percent for Kenya. Although no systematic cross-national pattern of variation in residual response is evident, the fact that the size of residual category varies so much, combined with its unknown, but quite likely varying, composition suggests the need for caution in interpreting indices of sex preference based on this question. Further consideration of cross-cultural variations in the appropriateness of verbalizing such preferences and differences in interview setting (for example, the extent to which interviewers insist on a positive choice by respondents) underscores the need for caution in interpretation.

45. Jordan Fertility Survey, 1976, Vols 1 and 2 (Amman: Department of Statistics, 1979) and The Egyptian Fertility Survey 1980, Vols 1 through 4 (Cairo: Central Agency for Public Mobilization and Statistics, 1983).

46. Robert Repetto, et al., Economic Development, Population Policy, and Demographic Transition in the Republic of Korea. (Cambridge, Mass.: Harvard University Press, 1981).

47. Cleland et al. cited in note 43, Table A2, p. 37.

48. George L. Harris, et al., Area Handbook for Nepal, Bhutan, and Sikkim. (Washington, D.C.: U.S. Government Printing Office, 1973).

49. A clear difference in the pattern of women's work exists between Hindu Indo-Aryan and Tibeto-Burman communities, with the extent of market participation and short term labor migration by women much greater in the latter than in the former. See Meena Acharya and Lynn Bennett, "Women and the subsistence sector: Economic participation and household decision making in Nepal", World Bank Staff Working Papers No. 526. (Washington, D.C.: The World Bank, 1982).

50. From Cleland et al., cited in note 43, Table A1, pp. 31-35.

51. For the reduced sample, the estimated equation with infant mortality included is:

$$\begin{array}{lll} TFR = 4.9 + .024\ BG + .008\ IMR & R^2 = .57 \\ \qquad\quad (.007) \quad (.008) & F = 13.0 \end{array}$$

52. Phillips Cutright, "Statistical models of interrelations between socio-economic development and fertility in less developed areas". Paper prepared for the Fertility Determinants Project, Indiana University,

Bloomington, Indiana (1983). For a recent analysis which has the same problems see: Phillips Cutright, "The ingredients of recent fertility decline in developing countries". International Family Planning Perspectives 9, no. 4 (December 1983): 101-109.

53. Barbara K. Larson, "The status of women in a Tunisian village: Limits to autonomy, influence, and power", Signs 9: no. 3 (Spring 1984): 417-433.

54. Larson, cited in note 53, p. 424.

55. Larson, cited in note 53, p. 425.

56. Larson, cited in note 53, p. 425.

BEST COPY AVAILABLE

APPENDIX

Table A1: Variables Used in Regression Analysis

Country	Median Age Difference Between Partners[a]	Female Secondary School Enrollment Ratios[b]	Total Fertility Rate (1)[c]	Total Fertility Rate (2)[d]	Infant Mortality Rate[e]	Median Age at First Marriage (Females)[f]	GNP Per Capita[g]
Ghana	7.6	27	6.8	—	121	18.2	400
Kenya	7.1	7	8.1	—	87	18.3	420
Lesotho	5.6	15	5.8	—	126	18.4	540
Sudan (north)	8.4	9	6.9	—	79	17.5	380
Syria	6.1	32	7.3	—	65	18.1	1570
Bangladesh	9.1	11	6.1	6.4*	135	13.9	140
Nepal	3.8	4	6.0	6.4*	142	16.6	150
Pakistan	6.5	8	5.8	6.4*	139	16.6	350
Sri Lanka	4.8	49	3.5	3.4+	60	21.0	300
Indonesia	4.9	15	4.2	4.2+	95	17.1	530
Korea	4.0	49	4.0	2.9+	42	22.0	1700
Malaysia	4.4	40	4.3	4.0*	36	20.4	1840
Philippines	2.5	57	4.8	4.6*	58	20.4	790
Thailand	3.3	22	4.2	3.7+	65	19.7	770
Colombia	4.6	37	4.4	3.6+	70	19.7	1380
Paraguay	4.0	21	4.9	4.3*	61	19.8	1630
Peru	3.8	46	5.2	5.1*	96	19.7	1170
Costa Rica	3.0	45	3.5	3.5*	53	21.0	1430
Mexico	3.0	28	5.7	5.0*	72	19.1	2250
Haiti	4.1	7	5.7	4.7*	123	19.7	300
Jamaica	4.1	62	4.5	3.8*	43	18.9	1180

Notes

a. For women once in union, duration of union less than 10 years. Source: Casterline and McDonald, cited in note 52, Table 4.

b. Ratios circa 1975. Source: UNESCO, Statistical Yearbook 1981 (Paris: UNESCO, 1981), Table 3.2.

c. From WFS Sources: Robert Hauseberg, Current Fertility, World Fertility Survey Comparative Studies no. 11, International Statistical Institute, London, May, 1980; and various Summary of Findings and Country Reports.

d. (*) From World Development Report 1982, Table 20; (+) From Figure 5.3, Chapter 5 of WDR 1984 draft. Where no figure is given, WFS(1) estimates are used.

e. Shea Omar Rutenstein, Infant and Child Mortality: Levels, Trends and Demographic Differentials, World Fertility Survey Comparative Studies no. 28, International Statistical Institute, London, September 1983.

f. Source: Casterline and McDonald, cited in note 52.

g. World Development Report 1983, Table 1.

Appendix

Table A2: Means and Standard Deviations of Variables Used in Regression Analysis

	Mean	Standard Deviation
TFR(2)	5.09	1.50
Age Difference (01.)	.33	.48
IMR	84.2	34.3
Log GNP Per Capita	6.53	0.83
Median Age at Marriage	18.9	1.86
Female Secondary School Enrollment	28.1	18.3
AD * IMR	35.8	54.4
AD * LOGGNP	2.02	2.95
AD * MAAM	5.76	8.40
AD * FENROL	5.19	9.29

World Bank Publications of Related Interest

The African Trypanosomiases: Methods and Concepts of Control and Eradication in Relation to Development
C. W. Lee and J. M. Maurice

Here is a practical cost-benefit approach to an age-old problem affecting humans and livestock alike, the African Trypanosomiases. Describes new techniques that offer tsetse control without destroying game animals. Also summarizes current research in genetic control, the use of traps and screens, attractants, and pheromones.

Technical Paper No. 4. 1983. 107 pages.

ISBN 0-8213-0191-8. Stock No. BK 0191. $5.

Analyzing the Impact of Health Services: Project Experiences from India, Ghana, and Thailand
Rashid Faruqee

Staff Working Paper No. 546. 1982. 44 pages.

ISBN 0-8213-0117-9. Stock No. WP 0546. $3.

NEW

Child and Maternal Health Services in India: The Narangwal Experiment

What can primary health care and family planning do for women and children in the poor and deprived areas of the world? Some of the most specific evidence available today to support the benefits of these services is contained in these two studies, which represent the findings of research carried out during 1967-74 in twenty-six villages in Punjab, India.

Members of the research staff, which started with 15 people and grew to about 150 by the end of the project, spent many years working with, and sharing the lives of, villagers. The depth of understanding that came from this type of sharing enhances the value of these findings and provides valuable insights into possibilities for implementing mass programs for needy people in villages throughout the world.

Volume 1: Integrated Nutrition and Health Care
Arnfried A. Kielmann and others

This volume provides detailed data suggesting that synergism between malnutrition and infection is probably the greatest cause of mortality, morbidity, and retarded growth and development in children. In an experiment over a period of four years, villagers received nutrition care, general health care to control infections, or both. Dramatic improvements, including a 40%-50% decline in mortality, a 20% reduction in duration of morbidity, and increases in height and weight. In addition, detailed information on costs is presented that permits the most complete analysis of cost-effectiveness and program relevant costs and benefits yet available in this kind of field research. The study focuses directly on practical program implications and ways in which such integrated services can be applied under field conditions.

The Johns Hopkins University Press. 1984. 288 pages.

LC 82-23915. ISBN 0-8018-3064-8. Stock No. JH 3064. $24.50.

Volume II. Integrated Family Planning and Health Care
Carl E. Taylor and others

To village people, politicians, and international health planners, health and family planning have always seemed to fit naturally together. But in the early 1960s, when international awareness of the social and economic consequences of surging population growth moved family planning into a position of high priority, some international agencies began to advocate separation of family planning from health services. In international policy discussions the question continues to be important. This volume analyzes this question and provides arguments and evidence to support integration of health care and family planning; it outlines the purposes underlying the research in this area; and it proposes policy questions regarding the effectiveness, efficiency, and equity of such an integration.

The Johns Hopkins University Press. 1984. 256 pages.

LC 83-23915. ISBN 0-8018-2830-9. Stock No. JH 2830. $22.50.

Demographic Aspects of Migration in West Africa—
K. C. Zachariah and others

Volume 1

Staff Working Paper No. 414. September 1980. 369 pages (including statistical annexes, bibliography).

Stock No. WP 0414. $15.

Volume 2

Staff Working Paper No. 415. September 1980. 391 pages (including statistical annexes, bibliography).

Stock No. WP 0415. $15.

(These Working Papers are background studies for Migration in West Africa: Demographic Aspects, *described in this section.)*

Economic Motivation versus City Lights: Testing Hypotheses about Inter-Changwat Migration in Thailand
Fred Arnold and Susan H. Cochrane

Staff Working Paper No. 416. September 1980. 41 pages (including footnotes, references).

Stock No. WP 0416. $3.

Experiments in Family Planning: Lessons from the Developing World
Roberto Cuca and Catherine S. Pierce

A comprehensive review of experimental efforts in the developing world to determine more effective ways of providing family planning services.

The Johns Hopkins University Press, 1978. 276 pages (including bibliography, index of experiments).

LC 77-16596. ISBN 0-8018-2013-8, Stock No. JH 2013, $19.50 hardcover; ISBN 0-8018-2014-6, Stock No. JH 2014, $8.95 paperback.

Family Planning Programs: An Evaluation of Experience
Roberto Cuca

Staff Working Paper No. 345. 1979. 146 pages (including 2 annexes, references).

Stock No. WP 0345. $5.

Fertility and Education: What Do We Really Know?
Susan H. Cochrane

A model identifying the many channels through which education might

Prices subject to change without notice and may vary by country.

BEST COPY AVAILABLE

act to determine fertility and a review of the evidence of the relation between education and the intervening variables in the model that affect fertility.

The Johns Hopkins University Press, 1979. 188 pages (including bibliography, index).

LC 78-26070. ISBN 0-8018-2140-1. Stock No. JH 2140. $6.95 paperback.

Fertility and Its Regulation in Bangladesh

R. Amin and Rashid Faruqee

Staff Working Paper No. 383. 1980. 54 pages (including references).

Stock No. WP 0383. $3.

Health

Fredrick Golladay, coordinating author

Draws on experience gained from health components of seventy World Bank projects in forty-four countries between 1975 and 1978. Emphasizes the disproportionately high expenditures incurred on curative medicine, maintenance of expensive hospitals, and sophisticated training of medical personnel at the cost of preventive care for the majority of the people. Points out that low-cost health care systems are feasible and recommends that the Bank begin regular and direct lending for health, in addition to having health components as part of projects in other sectors.

Sector Policy Paper. 1980. 90 pages (including 8 annexes, 4 figures, map).

Stock Nos. BK 9066 (Arabic), BK 9067 (English), BK 9068 (French), BK 9069 (Spanish). $5.

Health Issues and Policies in the Developing Countries

Fredrick Golladay

Staff Working Paper No. 412. 1980. 55 pages.

Stock No. WP 0412. $3.

Health, Nutrition, and Family Planning in India: A Survey of Experiments and Special Projects

Rashid Faruqee and Ethna Johnson

Staff Working Paper No. 507. 1982. 108 pages (including references).

Stock No. WP 0507. $5.

Infant and Child Mortality as a Determinant of Fertility: The Policy Implications

Susan Hill Cochrane and K. C. Zachariah

An illustrative analysis that suggests infant mortality may be an important component of a fertility reduction program in countries where mortality is high and few couples are able to have the number of surviving children they desire.

World Bank Staff Working Paper No. 556. 1983. 44 pages.

ISBN 0-8213-0147-0. Stock No. WP 0556. $3.

Integrating Family Planning with Health Services: Does It Help?

Rashid Faruqee

Staff Working Paper No. 515. 1982. 47 pages.

ISBN 0-8213-0003-2. Stock No. WP 0515. $3.

Kenya: Population and Development

(See description under Country Studies listing.)

Migration in West Africa: Demographic Aspects

K. C. Zachariah and Julien Conde

The first study of the large-scale movement of people in nine West African countries. Discusses the volume and direction of internal and external flows and the economic and social characteristics of migrants.

A joint World Bank-OECD study. Oxford University Press, 1981. 166 pages (including 22 maps, bibliography, index).

LC 80-21352. ISBN 0-19-520186-8, Stock No. OX 520186, $19.95 hardcover; ISBN 0-19-520187-6, Stock No. OX 520187, $8.95 paperback.

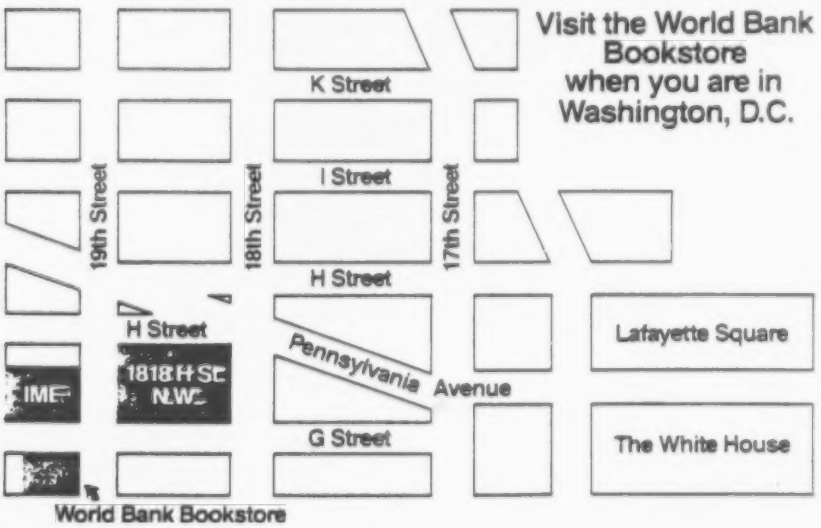
Population and Family Planning in Bangladesh: A Study of the Research

Mohammad Alauddin and Rashid Faruqee

Reviews major studies on family planning and on fertility trends, profiles, and determinants. Evaluates results of such studies and critiques their methodology and application. Underscores need for continued study and suggests directions for future research to improve the Bangladesh population problem.

World Bank Staff Working Paper No. 557. 1983. 176 pages.

ISBN 0-8213-0150-0. Stock No. WP 0557. $5.



Population and Poverty in the Developing World

Nancy Birdsall

Staff Working Paper No. 404. 1980. 96 pages (including 2 appendixes, bibliography).

Stock No. WP 0404. $3.

Population Policy and Family Planning Programs: Trends in Policy and Administration

Kandiah Kanagaratnam and Catherine S. Pierce

Staff Working Paper No. 447. 1981. 80 pages (including bibliography, appendixes).

Stock No. WP 0447. $3.

BEST COPY AVAILABLE

NEW

Short-term Population Projection, 1980-2020 and Long-term Projection, 2000 to Stationary Stage by Age and Sex for All Countries of the World

My T. Vu, under the supervision of K. C. Zachariah

This report gives detailed population projections by age and sex for each country at five-year intervals from 1980 to 2020 and at twenty-five year intervals from 2000 to the year in which population becomes stationary in each country. The implied fertility and mortality measures are also given. Revised annually. The 1984 edition will be published as *World Population Projections: Short- and Long-term Projections by Age and Sex for All Countries, with Related Demographic Statistics*

1983. 391 pages.

ISBN 0-8213-0355-4. $30 paperback.

NEW

Rapid Population Growth in Sub-Saharan Africa: Issues and Policies

Rashid Faruqee and Ravi Gulhati

No other country has higher fertility than Kenya and its neighboring countries in Sub-Saharan Africa. This Working Paper examines the reasons for fertility rates staying high, even rising in the face of greater education, falling mortality, and urbanization—factors that tend to lower fertility elsewhere. Calls for a viable population policy and programs appropriate to the culture.

Staff Working Paper No. 559. 1983. 116 pages.

ISBN 0-8213-0152-7. Stock Nos. WP 0559. $5.

Regional Aspects of Family Planning and Fertility Behavior in Indonesia

Dov Chernichovsky and Oey Astra Meesook

Staff Working Paper No. 462. 1981. 62 pages (including appendix, references).

Stock No. WP 0462. $3.

BEST COPY AVAILABLE

The World Bank
Publications Order Form

SEND TO: **YOUR LOCAL DISTRIBUTOR** OR TO **WORLD BANK PUBLICATIONS**
(See the other side of this form.)
P.O. BOX 37525
WASHINGTON, D.C. 20013 U.S.A.

Date _____

Name _____

Title _____

Firm _____

Address _____

City _____ State _____ Postal Code _____

Country _____ Telephone (_____) _____

Purchaser Reference No. _____

Ship to: (Enter if different from purchaser)

Name _____

Title _____

Firm _____

Address _____

City _____ State _____ Postal Code _____

Country _____ Telephone (_____) _____

Check your method of payment.
Enclosed is my ☐ Check ☐ International Money Order ☐ Unesco Coupons ☐ International Postal Coupon.
Make payable to World Bank Publications for U.S. dollars unless you are ordering from your local distributor.

Charge my ☐ VISA ☐ MasterCard ☐ American Express ☐ Choice. (Credit cards accepted only for orders addressed to World Bank Publications.)

_____ Credit Card Account Number

_____ Expiration Date

_____ Signature

☐ Invoice me and please reference my Purchase Order No. _____.

Please ship me the items listed below.

Stock Number	Author/ Title	Customer Internal Routing Code	Quantity	Unit Price	Total Amount $

All prices subject to change. Prices may vary by country. Allow 6-8 weeks for delivery.

Subtotal Cost $_____

Total copies _____ Air mail surcharge if desired ($2.00 each) $_____

Postage and handling for more than two complimentary items ($2.00 each) $_____

Total $_____

Thank you for your order.

IBRD-0053

Distributors of World Bank Publications

ARGENTINA
Carlos Hirsch, SRL
Attn: Ms. Monica Bustos
Florida 165 4° piso
Galeria Guemes
Buenos Aires 1307

AUSTRALIA, PAPUA NEW GUINEA, FIJI, SOLOMON ISLANDS, WESTERN SAMOA, AND VANUATU
The Australian Financial Review Information Service (AFRIS)
Attn: Mr. David Jamieson
235-243 Jones Street
Broadway
Sydney, NSW 20001

BELGIUM
Publications des Nations Unies
Attn: Mr. Jean de Lannoy
av. du Roi 202
1060 Brussels

CANADA
Le Diffuseur
Attn: Mrs. Suzanne Vermette
C.P. 85, Boucherville 14B 5E6
Quebec

COSTA RICA
Libreria Trejos
Attn: Mr. Hugo Chamberlain
Calle 11-13, Av. Fernandez Guell
San Jose

DENMARK
Samfundslitteratur
Attn: Mr. Wilfried Roloff
Rosenderns Alle 11
DK-1970 Copenhagen V

EGYPT, Arab Republic of
Al Ahram
Al Galaa Street
Cairo

FINLAND
Akateeminen Kirjakauppa
Attn: Mr. Kari Litmanen
Keskuskatu 1, SF-00100
Helsinki 10

FRANCE
World Bank Publications
66, avenue d'Iena
75116 Paris

GERMANY, Federal Republic of
UNO-Verlag
Attn: Mr. Joachim Krause
Simrockstrasse 23
D-5300 Bonn 1

HONG KONG, MACAU
Asia 2000 Ltd
Attn: Ms. Gretchen Wearing Smith
6 Fl., 146 Prince Edward Road
Kowloon

INDIA
UBS Publishers' Distributors Ltd.
Attn: Mr. D.P. Veer
5 Ansari Road, Post Box 7015
New Delhi 110002
(Branch offices in Bombay, Bangalore, Kanpur, Calcutta, and Madras)

INDONESIA
Pt. Indira Limited
Attn: Mr. Bambang Wahyudi
Jl. Dr. Sam Ratulangi No. 37
Jakarta Pusat

IRELAND
TDC Publishers
Attn: Mr. James Booth
12 North Frederick Street
Dublin 1

ITALY
Licosa Commissionaria Sansoni SPA
Attn: Mr. Giancarlo Bigazzi
Via Lamarmora 45
50121
Florence

JAPAN
Eastern Book Service
Attn: Mr. Terumasa Hirano
37-3, Hongo 3-Chome, Bunkyo-ku 113
Tokyo

KENYA
Africa Book Services (E.A.) Ltd.
Attn: Mr. M.B. Dar
P.O. Box 45245
Nairobi

KOREA, REPUBLIC OF
Pan Korea Book Corporation
Attn: Mr. Yoon-Sun Kim
P.O. Box 101, Kwanghwamun
Seoul

MALAYSIA
University of Malaya Cooperative Bookshop Ltd.
Attn: Mr. Mohammed Fahim Hji Yacob
P.O. Box 1127, Jalan Pantai Baru
Kuala Lumpur

MEXICO
INFOTEC
Attn: Mr. Jorge Cepeda
San Lorenzo 153-11, Col. del Valle
Deleg. Benito Juarez
03100 Mexico, D.F.

MIDDLE EAST
Middle East Marketing Research Bureau
Attn: Mr. George Vassiliou
Mitsis Bldg. 3
Makarios III Avenue
Nicosia
Cyprus
(Branch offices in Bahrain, Greece, Morocco, Kuwait, United Arab Emirates, Jordan)

NETHERLANDS
MBE BV
Attn: Mr. Gerhard van Bussell
Noorderwal 38
7241 BL Lochem

NORWAY
Johan Grundt Tanum A.S.
Attn: Ms. Randi Mikkelborg
P.O. Box 1177 Sentrum
Oslo 1

PANAMA
Ediciones Libreria Cultural Panamena
Attn: Mr. Luis Fernandez Fraguela R.
Av. 7, Espana 16
Panama Zone 1

PHILIPPINES
National Book Store
Attn: Mrs. Socorro C. Ramos
701 Rizal Avenue
Manila

PORTUGAL
Livraria Portugal
Attn: Mr. Antonio Alves Martins
Rua Do Carmo 70-74
1200
Lisbon

SAUDI ARABIA
Jarir Book Store
Attn: Mr. Akram Al-Agil
P.O. Box 3196
Rivadh

SINGAPORE, TAIWAN, BURMA
Information Publications Private, Ltd.
Attn: Ms. Janet David
02-06 1st Floor, Pei-Fu Industrial Building
24 New Industrial Road
Singapore

SPAIN
Mundi-Prensa Libros, S.A.
Attn: Mr. J.M. Hernandez
Castello 37
Madrid

SRI LANKA AND THE MALDIVES
Lake House Bookshop
Attn: Mr. Victor Walatara
41 Wad Ramanayake Mawatha
Colombo 2

SWEDEN
ABCE Fritzes Kungl. Hovbokhandel
Attn: Mr. Eide Segerback
Regeringsgatan 12, Box 16356
S-103 27 Stockholm

SWITZERLAND
Librairie Payot
Attn: Mr. Henri de Perrot
6, rue Grenus
1211 Geneva

TANZANIA
Oxford University Press
Attn: Mr. Anthony Theobuld
Maktaba Road, P.O. Box 5299
Dar es Salaam

THAILAND
Central Department Store, Head Office
Attn: Mrs. Ratana
306 Silom Road
Bangkok

Thailand Management Association
Attn: Mrs. Sunan
308 Silom Road
Bangkok

TUNISIA
Société Tunisienne de Diffusion
Attn: Mr. Slaheddine Ben Hamida
5 Avenue de Carthage
Tunis

TURKEY
Haset Kitapevi A.S.
Attn: Mr. Izzet Izerel
469, Istiklal Caddesi
Beyoglu-Istanbul

UNITED KINGDOM AND NORTHERN IRELAND
Microinfo Ltd.
Attn: Mr. Roy Selwyn
Newman Lane, P.O. Box 3
Alton, Hampshire GU34 2PG
England

UNITED STATES
The World Bank Book Store
600 19th Street, N.W.
Washington, D.C. 20433
(Postal address: P.O. Box 37525
Washington, D.C. 20013, U.S.A.)

Baker and Taylor Company
501 South Gladiola Avenue
Momence, Illinois, 60954

380 Edison Way
Reno, Nevada, 89564

50 Kirby Avenue
Somerville, New Jersey, 08876

Commerce, Georgia 30599

Bernan Associates
4730-E George Palmer Highway
Lanham, Maryland, 20761

Blackwell North America, Inc.
1001 Fries Mill Road
Blackwood, New Jersey 08012

Sidney Kramer Books
1722 H Street, N.W.
Washington, D.C. 20006

United Nations Bookshop
United Nations Plaza
New York, N.Y. 10017

VENEZUELA
Libreria del Este
Attn: Mr. Juan Pericas
Avda Francisco de Miranda, no. 52
Edificio Galipan, Apdo. 60.337
Caracas 1060-A

BEST COPY AVAILABLE

The World Bank

Headquarters
1818 H Street, N.W.
Washington, D.C. 20433, U.S.A.

Telephone: (202) 477-1234
Telex: WUI 64145 WORLDBANK
RCA 248423 WORLDBK
Cable Address: INTBAFRAD
WASHINGTONDC

European Office
66, avenue d'Iena
75116 Paris, France

Telephone: (1) 723-54.21
Telex: 842-620628

Tokyo Office
Kokusai Building
1-1 Marunouchi 3-chome
Chiyoda-ku, Tokyo 100, Japan

Telephone: (03) 214-5001
Telex: 781-26838

ISSN 0253-2115/ISBN 0-8213-0446-1

BEST COPY AVAILABLE